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COLONY OF MAURITIUS

Annual Report

ON THE

Medical and Health Department

1953

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Annual Report on the Medical and Health Department, 1953

Foreword

The improvement in health conditions noted in the previous report has been maintained except that an epidemic of whooping cough which prevailed during the whole year brought about the deaths of an appreciable number of young children, causing a significant increase in the infantile mortality rate.

The following figures for the last decade show the improvement in health conditions resulting from the practical eradication of malaria, from a higher standard of environmental hygiene and a better understanding of factors promoting good health, from the continued absence of cyclone and droughts with resultant high sugar production and comparative prosperity for the whole community :—

Year	*Birth rate per 0/00*	*Death rate per 0/00*	*Infant mortality rate per 0/00*	*Maternal mortality rate per 0/00 births*
1944 ...	43·52	27·1	141·0	8·73
1945 ...	38·3	36·1	188·0	14·96
1946 ...	38·7	29·5	145·2	10·39
1947 ...	43·8	20·1	113·9	5·25
1948 ...	43·1	23·8	186·2	4·13
1949 ...	46·0	16·6	91·0	3·79
1950 ...	49·7	13·9	76·3	3·51
1951 ...	47·5	14·9	83·5	3·24
1952 ...	48·0	14·8	80·8	3·2
1953 ...	46·3	16·1	93·5	2·71

That the improvement in the health conditions is not solely conditional on the eradication of malaria is borne out by the following figures regarding the incidence of enteric fever, pulmonary tuberculosis and diphtheria :—

ENTERIC FEVER

Year	*No. of cases notified*	*Rate per 0/00 of the population*	*Case mortality per cent*
1948 ...	371	0·839	23·18
1949 ...	316	0·711	16·77
1950 ...	319	0·686	15·98
1951 ...	326	0·67	15·95
1952 ...	252	0·502	7·54
1953 ...	108	0·21	10·18

PULMONARY TUBERCULOSIS

Year	*Death per 100,000 of the population*
1948	60·2
1949	65·24
1950	50·78
1951	49·
1952	40·08
1953	28·26

DIPHTHERIA

Year	*No. of cases*	*Incidence per 1,000 of population*	*Case mortality per 100*
1948	163	0·369	17·79
1949	154	0·346	14·28
1950	96	0·206	9·37
1951	88	0·18	19·31
1952	73	0·145	13·70
1953	62	0·12	6·45

The increase in the population of the Colony is taking place at a rate which is higher than the rate of construction of new houses, and although the new houses are of a better type than the old ones there are reasons to believe that the additional accommodation falls short of actual requirements. That the resultant overcrowding in the home, and the extra strain on the medical services imposed by an increasing population have not lead to any deterioration in the health conditions, are matters for gratification but not for complacency.

Instead, there is plenty of scope for the exercise of vigilance to prevent either the recrudescence of malaria or its re-introduction and to ensure the continued absence of epidemics of smallpox, cholera and plague. Likewise the improvement and extension of health services, the furthering of health education and the utilisation of the best means in the sphere of preventive and therapeutic medicine, are matters which should remain an integral function of the Health Department.

For the realisation of these aims, financial provision on an increasing scale will be necessary, but the co-operation of the public either individually or through the medium of local authorities, corporate bodies, voluntary organizations and a well informed press are essential elements.

The measure of success achieved by the Department as a whole and by individual members thereof is dependent to a large extent on this co-operation which, it is gratifying to record, has not been withheld from the Department.

The Civil Commissioners have continued to act as a valuable link between the Department and the population in all questions pertaining to rural health, whilst our relations with the Municipality of Port Louis and the Town Councils in the Plaines Wilhems area remained harmonious and fruitful.

The Press has willingly co-operated in publishing information on health subjects of local and universal interest whilst the Information Officer has demonstrated her awareness of, and interest in all questions pertaining to health, by repeated enquiries on the activities of the Department with a view to passing on information to the Press.

The voluntary organizations have not lagged behind. By extending the scope of their activities and by improving the standard of their work they have extended valuable help to the Department in such directions as Maternity and Child Welfare, blood transfusion, first aid, and domiciliary treatment of and succour to the sick and disabled.

It is a pleasure to record the harmony which has existed in our relations with the various voluntary organizations; and the help extended to the Department by the Maternity and Child Welfare Society, the Mauritius Branch of the British Red Cross Society, the St. John's Ambulance Brigade, the "Associatipn des Brancardiers de l'Ile Maurice," the Social Welfare Committees and other voluntary organizations functioning under the cover of anonymity.

The co-operation with the Senior Medical Officer, Military Hospital and the Mauritius Branch of the Britain Medical Association has been maintained, whilst our relations with the private medical practitioners have been smooth and fruitful.

I would fail in my duty were I not to record the assistance received from other Government Departments and the loyal co-operation of the staff, who working at high pressure and putting in long hours of attendance through shortage of personnel, have extended to the Director of the Medical Services their unstinted co-operation and discharged their duties with intelligence and devotion.

Visitors from overseas included Dr. W. Bolz and Dr. T. A. Austin of the World Health Organization.

Functions of the Department

2. The functions of the Medical and Health Department are :—

(*a*) to investigate the influence of social, environmental and domestic factors on the incidence of human disease and disability ;

(*b*) to plan and carry out measures for the promotion of health ;

(*c*) to institute and maintain measures for the prevention of disease ;

(*d*) to provide a quarantine service to prevent the introduction of infectious disease by sea or air ;

(*e*) to provide facilities for treatment of disease including mental disease, by maintenance of hospital and dispensary services ;

(*f*) to make provision for the rehabilitation of the disabled ;

(*g*) to control the practice of medicine, dentistry and pharmacy ;

(*h*) to provide facilities for the training of nurses, midwives and sanitary officers ;

(*i*) to advise local authorities regarding their health services and to inspect those services ;

(*j*) to prepare and publish reports and statistical or other information relating to health.

PART I

Administration

A. STAFF

3. The activities of the Department are co-ordinated by the Director Medical Services assisted by two Deputy Directors, and the staff is as follows :—

3	Medical Superintendents
4	Specialists (one vacancy existed on 31st December, 1953)
2	Part-time Specialists
2	Pathologists
2	Senior Medical Officers of Health
22	Medical Officers (5 vacancies existed on 31st December, 1953)
1	Medical Officer of Health (vacant on 31st December, 1953)
3	Part-time Medical Officers to fill vacancies as above.
4	Part-time Medical Officers i/c Mobile Dispensaries
1	Assistant Radiologist
1	Assistant Tuberculosis Officer (vacant on 31st December, 1953)
1	Assistant Orthopædic Surgeon
3	School Medical Officers (2 vacancies existed on 31st December, 1953)
3	Dental Surgeons
2	Chemists
1	Entomologist
1	Pharmacist
1	Rehabilitation Officer
1	Visiting Matron
3	Matrons
1	Sister in charge Orthopædic Unit
1	Superintendent of Midwives
1	Assistant Superintendent of Midwives
1	Assistant Matron
2	Occupational Therapists
15	Laboratory Assistants
23	Senior Dressers and Nurses (5 vacancies)
295	Dressers and Nurses (39 vacancies)
45	Midwives
29	Hospital attendants (including 5 Sisters of Mercy)
3	Senior Sanitary Inspectors
55	Sanitary Inspectors (5 vacancies existed on 31st December, 1953)
3	Fieldmen
3	Storekeepers
30	Clerks
1	Registrar Health Statistics
1	Compiler
3	Secretaries
1	Steward Quarantine Station
1	Transport Officer
1	Officer i/c Harbour Disinfecting Station
998	Others of minor ranks (which include messengers, drivers, hospital servants, storemen, office labourers)

In addition the staff of the Malaria Organization, now styled the Insect Borne Diseases Division, is as follows :—

1 Senior Medical Officer of Health (vacant)
1 Surveyor
2 Field Officers
8 Malaria Inspectors
4 Assistant Field Officers
5 Laboratory Assistants
5 Clerks
1091 Others (officers and employees).

B. STAFF MOVEMENTS

Overseas Leave : Departure

1 Medical Superintendent
2 Medical Officers (one on termination of agreement)
1 Pathologist (on termination of agreement)
1 Matron
1 Assistant Government Chemist
1 Charge Nurse
1 Sanitary Inspector Grade II
1 First Grade Clerk
2 Junior Laboratory Assistants Pathology
1 Dresser Grade III (on study leave).

Insect Borne Diseases Division

1 Chemist (on termination of agreement)
4 Field Officers (on termination of agreement).

The Director of Medical Services made a short visit to Rodrigues in May 1953 and accompanied His Excellency the Governor on a tour to the Dependencies from 16th October, 1953 to 10th November, 1953.

Arrival from Overseas Leave

1 Medical Superintendent
1 Medical Officer
1 Chief Clerk
1 Senior Laboratory Assistant Pathology
1 Steward and Clerk Mental Hospital
1 First Grade Clerk
1 Sanitary Inspector Grade II
1 Dresser Grade II
1 Dresser Grade III

The following first appointments were made :—

1 Medical Officer
1 Tuberculosis Officer
1 Matron
1 Physiotherapist

C. FINANCIAL

4. The revenue of the Colonial Government for the financial year 1952–53 was Rs. 90,006,187.97 of which Rs. 242,492.98 was received through the Health Department. The total expenditure on Medical Services was Rs. 8,407,698.63 or 9·45 per cent of the total expenditure for the year which amounted to Rs. 88,930,053. This represents a sum of Rs. 16·49 per head of the estimated population at 31st December, 1952 (mid-financial year).

The expenditure for health services under the Development and Welfare plan totalled Rs. 2,176,486.49 out of which Rs. 1,318,786.09 is recoverable from the Home Government and Rs. 857,700.40 chargeable locally.

D. LEGAL

5. *Ordinance No. 39*, cited as the Quarantine Ordinance, 1953—To amend and consolidate the law relating to quarantine and to provide for matters concerned therewith.

Government Notice No. 32, cited as the Pharmacy (Addition to List of Poisons) Order 1953 and being an order made by the Governor upon the recommendation of the Director Medical Services under Art. 37 of the Pharmacy Ordinance 1912, to amend Part I of Schedule 'A' to the Ordinance by the addition of the substance N—Allylnormorphine.

Government Notice No. 57, cited as the Pharmacy (Addition to List of Poisons) (No. 2) Order 1953 to amend Part I of Schedule 'A' to the Pharmacy Ordinance 1912 by the addition of the substance 3—Methoxy—N—Methylmorphinan.

Government Notice No. 68, made under Head V of Section 193 of the Public Health Ordinance, as subsequently amended, and cited as the Milk Trade (Amendment) Regulations 1953, to prohibit the sale of skimmed milk outside a depot or public market and specifying the minimum percentage of the constituents of skimmed milk.

Government Notice No. 167, cited as the Milk Trade (Amendment No. 2) Regulations 1953, to correct errors in Government Notice No. 162, being regulations made by the Director Medical Services under Head V of Section 193 of the Public Health Ordinance, as subsequently amended, to amend paragraph (3) of regulation (3) of the principal regulations by the addition of a proviso whereby the provisions of sub-para (*a*) (ii) and provisions of sub-para (*b*) of this paragraph shall have effect as from the 1st December 1953—the present regulation being deemed to have been in force as from the 5th July, 1953.

Government Notice No. 175 cited as the Pharmacy (Addition to List of Poisons) (No. 3) Order 1953, to amend Part I of Schedule 'A' to the Pharmacy Ordinance 1912 by the addition of the substance Morpholinylethymorphine.

Proclamation No. 2, cited as the Dangerous Drugs Ordinance (Relaxtion) Proclamation 1953, to proclaim that Section 32 (1) of the Dangerous Drugs Ordinance 1950 shall cease to apply to the drug N—Allylnormorphine.

Proclamation No. 4, cited as the Dangerous Drugs Ordinance (Application) Proclamation, 1953, to extend the application of Part IV of the Dangerous Drugs Ordinance 1950 to 3—Methoxy N—Methylmorphinan.

Proclamation No. 36, cited as the Dangerous Drugs Ordinance (Application) (No. 2) Proclamation 1953, to extend the application of Part IV of the Dangerous Drugs Ordinance 1950 to Morpholinylethylmorphine.

General Notice No. 176, under Section 161 of the Public Health Ordinance, to select and appoint a portion of land at Petite Mare Tabac in the District of Grand Port to be used as a private cemetery owned by the Mare Tabac Village Council.

General Notice No. 210, cited as the Public Health (Disposal of refuse) Regulations 1948, to give notice that the Regulations published under G. N. No. 196 of 1948 shall apply to the villages of Chemin Grenier—Chamouny and Plaine Magnien.

General Notice No. 857, under the Public Health (Disposal of Refuse) Regulations 1948, to the effect that the regulations published under G. N. No. 196 of 1948 shall apply to the Village of Grand Bay as from 1st December, 1953.

General Notice No. 898, under Section 161 of the Public Health Ordinance to select and appoint a portion of land at St. Hubert in the District of Grand Port to be used as a cemetery.

PART II

Natural Conditions

6. *Physiography.*—The island of Mauritius lies between latitude 19°50 and 20°31 South and longitude 57°18 and 57°48 East of Greenwich. The total length North to South is nearly 39 miles and its breadth East to West is 29 miles. The area of the main island is 716 square miles and that of the small islets round the coast 4 square miles, making a totol of 720 square miles (460,800 acres). The ground rises to an elongated central plateau, lying roughly North—South, the altitude of which above sea level is 1,800-1,900 feet. It is bounded on the North, East and South-West by abrupt and broken mountain ridges. On the South and South-East it slopes gradually to the sea. The highest mountain peak is 2,711 feet.

The coast line is irregular and is surrounded by numerous coral reefs. There are two ports and several anchorages of minor importance ; the two ports are Port Louis on the North-West and Mahebourg on the South-East. Numerous sea-side resorts and bathing stations exist all round the coast.

Rivers and streams are numerous. They generally flow through large ravines and their course is frequently broken by waterfalls and rapids. None of the rivers are navigable and the regime of most of them is very variable : in dry weather they are little more than streams, while during heavy rains they swell to raging torrents.

7. *Climate.*—The climate of Mauritius is on the whole comparatively mild and equable, although appreciable differences exist, according to locality in the various parts of the island.

At sea level the maximum temperature has rarely exceeded 95° F (35° C) and at the highest altitude (1,800 feet above sea level) the maximum has seldom reached 80·6° F (27° C).

The relative humidity is however high throughout the island making the heat in summer oppressive and the cold in winter uncomfortable.

Rainfall is abundant but unevenly distributed both as regards time of occurrence and according to locality, the fluctuations for average annual rainfall ranging from 45 inches on the West coast to 100 inches on the Central plateau.

Likewise, the heavy summer rainfall begins in December and continues through the months of January to April, the months of July to November being dry, the months of September and October being the driest months.

In 1953, the weather presented the following features :—

(*a*) *Cyclones.*—No tropical cyclone visited Mauritius and as in the preceding year, the strongest winds were experienced in winter (July and August), and never exceeded an average of 28 miles per hour.

(*b*) *Rainfall.*—The total for the year averaged 23% above normal for the whole island. There was a marked deficiency in February and a smaller one in April whilst there was a large excess in May and June for the whole Island and in July for the South, East and Centre of the Island.

The rainfall in December was also high in all parts.

(*c*) *Temperature and Sunshine*—With rainfall and cloudiness above normal in many months, figures for sunshine and maximum day temperatures were mostly below normal and minimum night temperatures above normal, the departures from normal for temperatures being slight and never in excess of 2° C.

(*d*) *Humidity.*—The relative humidity was somewhat lower than normal in January, February, April and August, especially so in April. In June and December it was somewhat higher than normal.

PART III

Laboratory Services

8. These consist of a Central Laboratory at Reduit which comprises a bacteriological and pathological division and a chemical division, and two branch laboratories at Civil and Victoria Hospitals. In addition, periodical visits are paid by a Laboratory Assistant to the Orthopaedic Hospital.

The total number of examinations amounted to 75,120 in 1953 as compared with 65,127 in 1952 and 64,151 in 1951.

A report on Laboratory Services is appended. (Appendix I).

TABLE I

REPORT ON HOSPITAL (CALENDAR YEAR 1953)

Hospital	*Patients remaining on 31.12.52*	*Total Admissions*	*Deaths*	*Patients remaining on 31.12.53*	*Number of beds*	*Number of patients on any date during period under review*		*Medical cases*	*Surgical cases*	*Number of operations performed on*	
						Maximum	*Minimum*			*In-patients*	*Out-patients*
Civil	231	8,454	424	216	410	395	216	5,979	2,475	1,960	4,771
Long Mountain	27	2,243	26	15	65	78	22	2,031	212	63	193
Poudre d Or	5	2,652	31	8	70	82	4	2,287	365	142	1,329
Flacq	42	2,836	63	30	92	109	26	2,353	483	104	1,464
Mahebourg	32	2,433	111	28	105	105	28	2,002	431	205	1.409
Souillac	45	3,310	73	43	89	104	43	1,950	1.360	212	254
Moka	31	1,621	51	19	80	85	19	976	645	466	617
Victoria	145	6,887	341	159	263	283	163	4,365	2,522	1,729	8,713
Mental (Infirmary only) * ...	12	417	33	46	64	58	17	399	18	84	—
Industrial School	4	197	—	5	16	25	1	119	78	6	70
Beau Bassin Prisons	10	269	1	8	57	21	4	203	66	8	273
Floreal †	147	584	17	142	228	233	142	130	454	1,568	1,740
Leper	48	6	2	48	62	48	46	6	—	—	—
TOTALS ...	779	31,909	1,173	767	1,601	1,626	731	22,800	9,109	6,547	**20,833**

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* Infirmary only. The Mental Hospital has a total bed strength of 693.

† Hospital for poliomyelitis and orthopaedic cases.

PART IV

Medical Services

9. The marked increase in the population which has been a feature of the past five years has not been matched by an increase of bed accomodation in hospitals. The result is that it frequently occurs that patients have to be refused hospital admission or to be discharged prematurely.

The strain imposed is greater on the general hospitals than on the district ones because residents in rural areas do not always make the best use of facilities within easy access of their homes but prefer to report to general hospitals where better laboratory, specialist and auxiliary services are available.

In 1953, 31,909 in-patients were admitted to hospitals, the figures for the three previous years being 31,206 in 1952, 30.747 in 1951 and 28,303 in 1950. This upward trend creates a difficult and unsatisfactory state of affairs and the provision of additional accommodation for the hospital services has been receiving the attention of the Director Medical Services over the last few years.

10. The staff position as a whole remained difficult as evidenced by the number of vacancies existing in the ranks of officers as reported in Part I. A number of officers returned from study leave, but the outlook remains precarious as other medical officers are scheduled to proceed on overseas study leave. There are, however, at the time of writing, clear indications that the shortage of doctors resulting in the war years will soon be remedied by the return to the Colony of doctors due to qualify in the near future.

Table I shows the work performed at the various hospitals.

MEDICAL STORES

11. The Stores Section is under the charge of a Storekeeper who is responsible for indenting on the Crown Agents for supplies, equipment and appliances (the Pharmacist being responsible for the placing of orders for drugs and surgical dressings), and for storing the articles received from overseas or purchased locally.

The distribution of drugs and supplies to hospitals and dispensaries is performed by an Assistant Storekeeper.

In the course of the year a Pharmaceutical Laboratory has been opened at Victoria Hospital where solutions for injections, either as a routine measure or at the request of Medical Officers in certain selected cases, are prepared under the supervision of the Government Pharmacist. It is hoped that, in the near future, it will be possible to issue drugs in ampoules from the Pharmaceutical Laboratory.

RADIOLOGY

12. The work of this branch continues to expand. The number of examinations conducted in 1953 were 16,372, the figures for 1952 being 14,034, whilst those for the years 1951 and 1950 were 12,726 and 8,780 respectively. The work of this branch has very nearly doubled in the course of the last four years.

The main centre for X-Ray diagnosis is at Victoria Hospital, where the details concerning the examinations performed are as follows ; the corresponding figures for 1952 are also shown for the sake of comparison.

	1953	*1952*
Skeleton	5,776	4,957
Alimentary tract	2,536	2,322
Chest	4,535	3,980
Urinary tract	526	333
Abdominal organs	439	271

In addition 2,560 examinations for orthopædic cases were conducted at Civil Hospital.

The radium available in the Colony, which is to be considerably increased in the very near future, was used for the treatment of 85 cases, the details being thus :

Carcinoma of uterus	66
Carcinoma of breast	3
Carcinoma of skin	7
Malignant glands	1
Non-malignant cases	8

In 1952, 32 cases of malignancy and 6 of non-malignancy received treatment.

13. The Ophthalmological Service continued to be under a most devoted part-time specialist who holds four weekly sessions at the two main hospitals, namely Civil and Victoria. In addition, he is on call for all emergencies.

14. Table II indicates the surgical work performed in all the public hospitals during 1953 :—

TABLE II

Nature of Operations	*Number performed*
1. STOMACH AND DUODENUM :—	
(*a*) Closure of perforation	25
(*b*) Gastro-enterostomy	76
(*c*) Gastrectomy	37
(*d*) Others	7
2. INTESTINES :—	
(*a*) Closure of wounds and perforations	6
(*b*) Resection and / or anastomosis	—
(*c*) Reduction of volvulus	1
(*d*) Reduction of Intussusception	14
(*e*) Division of adhesions or bands	2
(*f*) For any other cause of obstruction	2
(*g*) Formafion or closure of artificial anus	10
(*h*) Appendicectomy	401
(*i*) Drainage of peritoneal abscesses	3
(*j*) Omentopexy	—
(*k*) Exploratory Laparatomy	24
(*l*) Others	4
3. RECTUM AND ANUS :—	
(*a*) Excision of rectum	—
(*b*) Treatment of prolapse	14
(*c*) For fissure and fistula	51
(*d*) For ischio-rectal abscess	1
(*e*) Ligature of haemorroids	98
(*f*) Injection of haemorroids	19
(*g*) Sigmoidoscopy	37
(*h*) Others	53

TABLE II—*continued*

Nature of Operations	*Number performed*
4. HERNIA :—	
(*a*) Inguinal	132
(*b*) Femoral	7
(*c*) Umbilical	8
(*d*) Others	21
5. LIVER, SPLEEN AND PANCREAS :—	
(*a*) Upon liver	10
(*b*) Cholecystectomy	5
(*c*) Other operations upon gall bladder	2
(*d*) Splenectomy	—
(*e*) For pancreatitis	2
(*f*) Others	—
6. URINARY SYSTEM ;	
(*a*) Nephrotomy	5
(*b*) Nephrectomy	8
(*c*) Perinephric explorations	3
(*d*) Upon ureters	8
(*e*) Cystotomy and supra pubic drainage	30
(*f*) Prostatectomy	13
(*g*) Urethrotomy	6
(*h*) For urethral fistula and abscess	1
(*i*) Cystoscopy and ureteric catheterization	71
(*j*) Urethral catheterization and passage of sounds	130
(*k*) Others	67
7. MALE ORGANS OF GENERATION :—	
(*a*) Circumcision	35
(*b*) Others for paraphimosis	61
(*c*) Amputation of penis	1
(*d*) Hydrocelotomy	97
(*e*) For varicocele	4
(*f*) Upon testis and epididymis	11
(*g*) Others	53
8. FEMALE ORGANS OF GENERATION :—	
(*a*) Ovariotomy	28
(*b*) Salpingotomy	8
(*c*) Salpingostomy, for sterility	1
(*d*) Myomectomy	—
(*e*) Hysterectomy	70
(*f*) Hysteropexy	53
(*g*) Cæsarian section	22
(*h*) Uterine suture	—
(*i*) For extra-uterine gestation	12
(*j*) Drainage of pelvic abscess	3
(*k*) Instrumental delivery and destruction of fœtus	101
(*l*) For vesico-or-recto vaginal fistula :—	
(i) Plastic repair	13
(ii) Uretero-colic anastomosis	5
(*m*) Colporrhaphy and perineorrhaphy	44
(*n*) Removal of uterine contents and/or dilatation and curettage	187
(*o*) Induction of labour or abortion	—
(*p*) Insufflation of fallopian tubes	—
(*q*) Uterine drainage	—
(*r*) Examination and/or manipulation of uterus or fœtus	9
(*s*) Upon cervix	112
(*t*) Others	132

TABLE II—*continued*

Nature of Operations	*Number performed*
9. EYE :—	
(*a*) For entropion	26
(*b*) For cataract	249
(*c*) For glaucoma	4
(*d*) Iridectomy	36
(*e*) Enucleation and evisceration	9
(*f*) Others	571
10. EAR, NOSE AND THROAT :—	
(*a*) Myringotomy	—
(*b*) Mastoidotomy	5
(*c*) Removal of foreign bodies	60
(*d*) Reduction of nasal fracture	1
(*e*) Reduction of septum	3
(*f*) Turbinectomy and/or drainage of sinuses	13
(*g*) Removal of tumours	23
(*h*) Tonsillectomy, by guillotine	475
(*i*) Tonsillectomy, by dissection (both including removal of adenoids)	35
(*j*) For quinzy	7
(*k*) Uvulotomy	—
(*l*) Laryngoscopy, bronchoscopy and œsophagoscopy	10
(*m*) Others	332
11. MOUTH AND NECK :—	
(*a*) Extraction of teeth	9,208
(*b*) Upon Jaws (Including treatment of fractures)	4
(*c*) Upon tongue and lips (including removal of tumours but excluding plastic)	20
(*d*) Excision or treatment of glands in neck	2
(*e*) Tracheotomy	8
(*f*) Thyroidectomy (including ligature of thyroid vessels)	4
(*g*) For Thyri-glossal cysts	1
(*h*) Others	28
12. CHEST :—	
(*a*) Thoracotomy and pleural drainage	2
(*b*) Lobectomy	—
(*c*) Upon cardia	—
(*d*) Phrenic avulsion	16
(*e*) Artificial pneumothorax	89
(*f*) Paracentesis	64
(*g*) Others	14
13. MAMMARY GLANDS :—	
(*a*) Mastectomy	17
(*b*) Excision of tumour	9
(*c*) Incision of abscess	236
14. CRANIUM :—	
(*a*) Decompression and treatment of fracture and haemorrhage	5
(*b*) For intracranial tumour	1
(*c*) Drainage of intracranial abscess	—
(*d*) Others	1
15. SPINAL COLUMN :—	
(*a*) Laminectomy	1
(*b*) Bone graft	26
(*c*) Manipulation and/or external fixation (for tuberculosis fracture and other conditions including application of plaster jacket)	3
(*d*) Lumbar and cisternal puncture	114
(*e*) Spinal injection	19
(*f*) Others	7

TABLE II—*continued*

Nature of Operations	*Number performed*
16. BONES ;—	
(*a*) For fractures :	
(i) Open operations (including bone graft, application of plates and other mechanical aids)	127
(ii) Manual and instrumental reduction and/or application of splints and plaster	979
(*b*) For osteomyelitis, osteitis and periostitis :	
(i) Acute	3
(ii) Chronic (including sequestrectomy and/or application of plaster)	51
(*c*) Removal of tumours	3
(*d*) Others	522
17. JOINTS :—	
(*a*) Arthrotomy :—	
(i) For sepsis	11
(ii) For removal of loose or foreign bodies ...	30
(*b*) Excision of joint	12
(*c*) Reduction of dislocation	52
(*d*) Manipulation for other purposes	3
(*e*) External fixation (including application of plaster)	10
(*f*) Aspiration	16
(*g*) Others	33
18. AMPUTATIONS :—	
(*a*) Of fingers	23
(*b*) Of hand and forearm	2
(*c*) Of arm	2
(*d*) Of toes	24
(*e*) Of foot and leg	17
(*f*) Of thigh	4
(*g*) Others	2
19. ARTERIES. VEINS AND NERVES :—	
(*a*) For aneurysm	—
(*b*) Ligature of vessels	17
(*c*) For angioma	1
(*d*) Injection of varicose veins	206
(*e*) Nerve suture and neurolysis	12
(*f*) Others upon nerves (including stretching and injection)	100
(*g*) Others	159
20. ORTHOPAEDIC AND PLASTIC OPERATIONS :—	
(*a*) Osteotomy (for deformities)	17
(*b*) Other treatment of deformities and contractures (including manipulation and application of splints and plasters)	155
(*c*) For hare lip add cleft palate	19
(*d*) Upon ears, nose and lips	36
(*e*) For elephantiasis	8
(*f*) Skin graft	84
(*g*) Others	17
21. CONDITIONS UNCLASSIFIED REGIONALLY :—	
(*a*) For ulcers (excluding skin graft)	3
(*b*) For other septic conditions (including incision of abscesses and whitlows)	3,303
(*c*) Suture and treatment of wounds (including tendon suture)	2,288
(*d*) Excision of superficial tumours (including cysts)	229
(*e*) Extraction of foreign bodies	244
(*f*) Removal of glands	6
(*g*) For burstitis and ganglion	3
(*h*) Treatment of burns	42
(*i*) Removal of parasites	—
(*j*) Others	526

ORTHOPÆDIC SURGERY

15. Details of work carried out at Floreal Hospital during 1953.

No. of patients in hospital on 31st December 1952		147
No. of patients in hospital on 31st December 1953		142
1. NEW CASES ADMITTED DURING CALENDAR YEAR 1953		584
A. Polio :—		
(*a*) Acute cases	12	
(*b*) Old cases	189	
		201
B. Orthopædic :—		
(*a*) Tuberculosis of skeletal system	43	
(*b*) Diseases of bones and joints	74	
(*c*) Injuries	42	
(*d*) Congenital deformities	15	
(*e*) Burns	15	
(*f*) Miscellaneous	67	
		256

RE-ADMISSIONS AND TRANSFERS DURING CALENDAR YEAR 1953

A. Polio		163
B. Orthopaedic :—		
(*a*) Tuberculosis of skeletal system	30	
(*b*) Diseases of bones and joints	34	
(*c*) Injuries	27	
(*d*) Congenital deformities	5	
(*e*) Burns	5	
(*f*) Miscellaneous	26	
		127

2. OPERATIONS

	Major	*Minor*	*Total*
Victoria Hospital	159	308	467
Civil Hospital	14	35	49
Floreal Hospital			
(In patients)	412	1,156	1,568
(Out patients)	87	1,653	1,740

3. TOTAL NUMBER OF PATIENTS WEARING INSTRUMENTS UNDER SUPERVISION

Polio cases	746	
Orthopædic cases	333	
		1,079

4. ATTENDANCES OF PATIENTS AT DOCTORS' CONSULTATIONS

Attendances	2,261	
Re-attendances	6,295	
		8,556
A. Attendances of Polio cases	1,032	
B. Attendances of Orthopædic cases		
(*a*) Tuberculosis	345	
(*b*) Injuries	2,224	
(*c*) Miscellaneous	4,955	
		7,524

Distribution of attendances at :—

Floreal Hospital	3,739	8,556
Victoria Hospital	3,010	
Civil Hospital	1,141	
District Clinics	666	

5. ATTENDANCES AT PHYSIOTHERAPY DEPARTMENT

In patients	11,874	29,231
Out patients	13,299	
Attendances at Victoria Hospital	4,058	

DENTAL WORK

16. Dental treatment remains confined to pre-school children, school children, expectant and nursing mothers, selected hospital cases and, when time is available, to members of the Police Force.

The following is a summary of the work performed at Victoria Hospital and by the Mobile Dental Clinic.

Victoria Hospital.—Though the work done is mainly dentistry for school children, several out-patients were seen.

3,195 appointments were made and 2,566 were recorded during the year 1953.

1,001 permanent teeth were filled either with silicates or amalgams.

505 permanent teeth were temporarily filled with zinc oxide and eujenol.

121 permanent teeth were extracted under local anaesthesia.

101 milk teeth were filled with zinc oxide and eujenol.

497 milk teeth were extracted.

86 gum treatment were carried out.

Of the number of children attending clinic during the past, it was noticed :—

(*a*) that only 72 did not need treatment as their oral hygiene and their teeth were very good ;

(*b*) and that 11 parents notified the dental surgeon that their children should not be treated at the dental clinic ;

(*c*) 174 children completed treatment ;

(*d*) 7 fractures were satisfactorily dealt with.

Mobile Dental Clinic.—The Mobile Dental Clinic first went into service on 5th January, 1953, and the field of its activities included the schools, Floreal Hospital and the Police Force.

The schools visited in 1953 were : Camp Fouquereaux Government School, Shri Shamboonath Government School at Camp Fouquereaux, Eau Coulée Roman Catholic Aided School, Terre Rouge Government School, Pamplemousses Government School, Brisée Verdière C.E.A. School, Saraswati H.A. School at Ecroignard, Roches Noires Government School, Camp Diable Government School, Grand Bois Government School and Plaine des Papayes Government School.

It would indeed have been a gigantic task if all the pupils at these schools—they numbered about 4,500—were given full and complete dental treatment. So it was decided that only those pupils who were about to leave and pupils of Standards VI and VII would receive complete treatment, The number of such pupils examined was 223 and of these 180 had their treatment completed. In a few cases, fathers objected to their children being treated. These 180 pupils needed 741 fillings and 356 extractions, with an average of 4 fillings and 2 extractions per pupil, thus showing a fairly high incidence of caries. The majority of the children were under 14.

In addition 1,213 other pupils who complained of toothache were treated. In most cases, the caries had so far advanced that the only treatment was extraction. 1,603 extractions were done.

Instruction in oral hygiene and correct use of the tooth brush was given to pupils of Standards VI and V.

In July the Surgeon in charge Dental Unit went to Rodrigues and when he resumed work in the Mobile Dental Clinic in October, the Standard VI examinations were over and attendance was irregular.

One day each week—Friday—was spent at Floreal Hospital. Child patients were given priority but adult patients were also treated. In the majority of cases, the only treatment that could be given was extraction. About 450 teeth were extracted and 120 filled. There was some difficulty in treating those patients who could not walk or be moved. Extractions had to be done in the wards, and as for fillings, it was impossible to do them in the wards, as a travelling foot engine would have been necessary.

During the Easter school holidays, 120 policemen were treated; 100 extractions, 300 fillings and 20 scalings were done. However, a few could not have their treatment completed during the holidays. So as from June, the Mobile Dental Clinic attended Line Barracks every other Saturday, and 40 more policemen have been treated; 60 extractions and 150 fillings were done. Four were treated for pyorrhaea by means of gingivectomy and, considering the fact that the Mobile Dental Clinic is not equipped with a gingivectomy set, the results have been excellent.

The Mobile Dental Clinic was out of service from July to October during the Dental Surgeon's visit to Rodrigues.

RODRIGUES DENTAL CLINIC

For the first time in the history of Rodrigues, a dental surgeon was sent there in 1953. As only part of the dental equipment ordered for Rodrigues had been received, some of the equipment of the Mobile Dental Clinic was taken to the dependency. The surgery was installed at the Port Mathurin Hospital. The G.M.O's wife and the Dental Sugeon's wife acted as assistants.

It was generally believed that the Rodriguans had fairly good teeth, but this was not confirmed. Caries may be slightly less common than in Mauritius, but pyorrhea is extremely common. Poor oral hygiene and the vitamin deficiency are probably the causes of the prevalence of pyorrhea. In most cases, the disease had advanced to such a stage that the patients were advised to have all their teeth extracted.

The schools at La Ferme, Lataniers and Port Mathurin were visited but the pupils had to come down to Port Mathurin Hospital for treatment.

During the 10 weeks of the visit, 456 teeth were filled and 900 were extracted. Besides 40 scalings were done and six patients treated for pyorrhea by means of gingivectomy.

THE MENTAL HOSPITAL

17.—(*a*) *General.*—The total number of certified insane persons in the Colony on 31st December, 1953 was 1,134 compared with 1,070 on 31st December, 1952.

The figures for the insane population of the Colony is shown in the following table :—

	General			*Sino-Mauritian*			*Indo-Mauritian*			*Grand Total*
	M	*F*	*T*	*M*	*F*	*T*	*M*	*F*	*T*	
At Mental Hospital	175	146	321	162	112	274	17	12	29	624
On Probation Leave	92	99	191	145	103	248	10	2	12	451
On leave under G. N. 239/24 ...	18	18	36	15	8	23	—	—	—	59
	285	263	548	322	223	545	27	14	41	1,134

The corresponding figure for 1952 was 1,070.

The percentage of sex distribution of the 1,134 certified insanes was : males 55·90 per cent and females 44·10 per cent compared with males 56·63 per cent and females 43·37 per cent for the estimated insane population of the island on 31st December, 1952.

The rate of insanity per 10,000 population for Mauritius and Rodrigues was 21·36.

The rate for the General Population per 10,000 was 33·0
The rate for the Indian Population per 10,000 was 15·7
The rate for the Chinese Population per 10,000 was 21·1

The above figures may not correspond to any racial tendency to mental diseases. Perhaps a more reliable guide would be the classification of cases according to occurrence in rural or urban areas. It is proposed to alter the form of classification in future.

(*b*) *Hospital Population.*—On the 31st of December, 1953, there were 676 patients in hospital. Of these 52 were still awaiting examination by the Commissioners in Lunacy.

The following table gives the number of admissions, discharges and deaths :—

	M	*F*	*Total*	*M*	*F*	*Total*
Remaining in Hospital on 1st January, 1953	348	277	625			625
CASES ADMITTED :—						
Back from New Year leave G. N. 239/24	27	20	47			741
1st Admissions	218	123	341			
Other admissions	62	22	84			
Readmitted from probation leave	118	88	206			
Died before examination by Commissioners in Lunacy	5	6	11			
Still awaiting examination by Crs in Lunacy	35	17	52			
Total cases under care				...	...	1,366
CASES DISCHARGED AND DEATHS :—						
Recovered and released	171	55	226			690
Transferred to poor houses	20	—	20			
Discharged by Central Board of Commissioners ...	174	162	336			
Died whilst on leave under G. N. 239/24	8	8	16			
Died during the year	18	15	33			
On leave under G. N. 239/24 on 31st December, 1953	33	26	59			
Remaining in hospital on 31st December, 1953 ...				389	287	676

During the year under review 85 patients (47 M and 38 F) on probation leave were found cured and finally discharged by the Central Board of Commissioners in Lunacy.

The daily average number of patients was 680 compared with 673 for the previous year. The maximum daily number of patients was 730 compared with 698 in 1952.

The ratio between the number of patients discharged and the number of admissions was 82·4 per cent.

Average stay of patients.—The average time spent in the Hospital is :—

122 days for those discharged in less than 1 year after admission ;

and 2 years and and 5½ months for those who have spent less than 5 years ;

Those whose stay has exceeded five years will probably never be fit to leave the Hospital.

Deaths.—33 deaths were registered compared with 37 in the previous year. Of these, 14 patients died some days after their admission owing to their poor state of health. The death rate was 4·85 per cent compared with 5·49 per cent for the previous year.

Causes of Insanity.—Alcoholism continues to be a major cause of insanity in male patients. The other factors in order of importance are malnutrition (especially among women), heredity, domestic worry, epilepsy. It is interesting to note that syphillis does not seem to be a problem as far as insanity is concerned.

Infective and allied diseases.—There were 27 cases of dysentery and 2 cases of typhoid fever, none of which was fatal. All the patients on admission are inoculated against typhoid fever, and the others receive one injection of T.A.B. yearly.

VIOLENCE AND ESCAPES

Minor injuries were noted as follows :

Injuries by patients to other patients	32
Injuries by patients to staff	5
Accidental injuries (among epileptics)...	38

4 patients (3 males, 1 female) escaped from the hospital and were brought back some days later. One male patient went on four days' leave and has absconded.

Physical methods of treatment

Insulin shock therapy and Electroplexy still continue to be the principal modes of treatment for persons suffering from schizophrenia and disorders of the affective type. The successful results already recorded ever since these methods were introduced are being maintained. About 40 per cent of the patients so treated made a good recovery and over 20 per cent had a good social remission.

Treatment with Acetylcholine was started this year but the results obtained so far do not seem to be very encouraging. Our outpatient clinic is attended by an ever-increasing number of patients.

Recreation and Occupational therapy

Shifts of twenty to twenty-two patients have a weekly outing at the sea-side. Through the courtesy of the Information Officer, cinema performances are given monthly at the hospital and it has also been possible to send some of our well-behaved patients to attend public cinema halls. Cards, drafts, pingpong, football, volley ball are favourite games and the piano is played almost daily by female patients. Radio broadcasts are transmitted through loud speakers to all the wards of the hospital.

A distribution of cakes and lemonade was made to the patients on Coronation and Christmas days and each patient received a present on these occasions.

A daily average of 90 female patients (of which 62 are regular workers) are kept busy in the laundry, linen room and in the cleaning of wards. On the male side, twenty patients work in the kitchen gardens which supply a good part of the vegetables needed for the hospital. Forty other patients do carpentry, cabinet-making, tin work, and help in the cleaning of wards and upkeep of the grounds and flower gardens. A small fee is now paid to the working patients and it has been possible to organise shopping expeditions for these patients. It is a great pleasure for these patients to spend, as they choose, the money they have earned in this way.

Cost of maintenance

Items for the period 1st January, 1953 to 31st December, 1953 :—

	Rs.	c.
Salaries and wages	526,766	05
Fees for district Commissioners in Lunacy	6,480	00
Fees for Member of the Central Board	260	00
Provisions, fuel and light	286,049	19
Clothing, bedding etc.	45,977	80
Uniforms	20,079	38
Drugs, dressings and surgical instruments	7,779	88
Implements, stores and sundries	6,005	43
TOTAL EXPENDITURE ...	899,397	73

The average daily cost per patient was Rs. 3.62.

The average cost of stay for patients discharged in less than one year and for those discharged in less than five years was Rs. 441.64 and Rs. 3,239.90 respectively.

Religious services.—Mass is said once a month in the Roman Catholic chapel of the hospital.

Discipline.—One male servant was dismissed for pilfering of patients' food.

Visits.—His Excellency the Governor Sir Hilary Blood visited the Hospital on one occasion and the Central Board of Comm.ssioners in Lunacy held fourteen meetings at the hospital. Drs. Austin and Bolz of the World Health Organization also visited the institution during their stay in the Colony. We had also the visit of the Honourable Guy Forget M.L.C. for Plaines Wilhems and of the Director, Medical Services of the French Island of Reunion. These gentlemen have kindly recorded in the Visitors' book their appreciation of the way in which the hospital is run.

Members of the Red Cross (Local Division) visited the Hospital on several occasions and distributed sweets and cigarettes to the patients. I should like to place on record their generous contribtion towards the welfare of our patients.

STATISTICS OF MORBIDITY AND MORTALITY

18. The statistics of morbidity and mortality in respect of hospitals and dispensaries are given in Table III. The statistical figures concerning the mobile dispensaris are shown separately in this table, figures for attendances being the only ones given, since the introduction of a card system has been found impracticable for the mobile units and there is consequently a considerable amount of uncertainty as regards new cases and reappearances.

The main causes of morbidity are enumerated in Table IV whilst Table V gives figures for hospital statistics by groups of diseases corresponding to the 1948 International Classification.

(2) DISPENSARIES

19. There are 33 static dispensaries in the Colony. The Mobile Service which comprises four units under four part-time medical officers provides for the needs of 64 villages and hamlets where it would be uneconomical to have permanent buildings. These extremely popular units made 973 trips and were attended by 111,849 patients during the year.

The total attendances at static dispensaries and at the out-patient departments attached to the hospitals numbered 399,899. The figures for the three immediately preceding years were 379,476 ; 362,946 and 303,549.

(3) TRAINING OF MEDICAL AND HEALTH STAFF, QUALIFICATIONS AND CONDITIONS REQUIRED

20.—(*a*) *Doctors*—No one can practice medicine and surgery in Mauritius unless he is the holder of either a qualification which renders him eligible for registration in the United Kingdom or a State degree in medicine delivered by any of the faculties of France.

(*b*) *Pharmacists.*—Persons authorised to practice as pharmacists in the Colony are those possessing diplomas or certificates entitling them to practise as pharmaceutical chemists or chemists and druggists, or as apothecaries in the United Kingdom, or provided with diplomas as chemists and druggists, or pharmacists from foreign Universities or Colleges, and authorised by the Governor on the recommendation of the Director of the Health Department, to act as pharmacists in the Colony ; or persons who obtain a Colonial diploma of pharmacist under the provisions of the Pharmacy Ordinance 1912.

TABLE III

	Cause Groups	Detailed List Number	Static Dispensaries and out-patient depts. of hospitals			Hospitals						Mobile Dispensaries Attendances
			New cases			Male patients		Female patients				
			Male	*Female*	*Total cases*	*New cases*	*Deaths*	*New cases*	*Deaths*	*Total cases*	*Total deaths*	
A	1. Tuberculosis of respiratory system ...	001–008	79	43	122	277	32	195	16	472	48	8
A	2 Tuberculosis of meninges and central nervous system	010	1	—	1	9	4	—	—	9	4	—
A	3. Tuberculosis of intestines, peritoneum and mesenteric glands	011	2	—	2	1	1	2	—	3	1	—
A	4. Tuberculosis of bones and joints ...	012,013	4	1	5	39	—	20	1	59	1	—
A	5. Tuberculosis, all other forms	014–019	6	13	19	3	—	9	—	12	—	—
A	6. Congenital syphilis	020	12	4	16	4	—	2	—	6	—	—
A	7. Early syphilis	021	50	68	118	10	—	4	—	14	—	—
A	8. Tabes dorsalis	024	—	—	—	1	—	—	—	1	—	—
A	9. General paralysis of insane	025	—	—	—	—	—	—	—	—	—	—
A	10. All other syphilis	022,023 026–029	138	203	341	70	2	62	2	132	4	2
A	11. Gonococcal infections	030–035	61	6	67	13	—	1	—	14	—	—
A	12. Typhoid fever	040	—	—	—	60	4	34	3	94	7	—
A	13. Paratyphoid fever and other Salmonella infections	041,042	—	—	—	1	—	—	—	1	—	—
A	14. Cholera	043	—	—	—	—	—	—	—	—	—	—
A	15. Brucellosis (undulant fever)	044	—	—	—	—	—	—	—	—	—	—
A	16.—(*a*) Bacillary dysentery	045	1	1	2	4	—	6	—	10	—	4
	(*b*) Amœbiasis	046	386	225	611	47	2	15	—	62	2	8
	(*c*) Other unspecified forms of dysentery	047,048	979	933	1,912	85	1	23	—	108	1	1,746
A	17. Scarlet fever	050	—	—	—	—	—	—	—	—	—	—
A	18. Streptococcal sore throat	051	3	4	7	2	—	—	—	2	—	—
A	19. Erysipelas	052	—	3	3	3	—	—	—	3	—	—
A	20. Septicæmia and pyæmia	053	—	1	1	5	3	3	1	8	4	—
A	21. Diphtheria	055	5	3	8	11	—	18	4	29	4	—
A	22. Whooping cough	056	1,152	1,300	2,452	27	2	28	—	55	2	980
A	23. Meningococcal infections	057	—	—	—	—	—	—	—	—	—	—
A	24. Plague	058	—	—	—	—	—	—	—	—	—	—
A	25. Leprosy	060	—	—	—	—	—	—	—	—	—	—

TABLE II—*continued*

	Cause Groups	*Detailed List Number*	*Statistic Dispensaries and out-patient depts of hospitals*			*Hospitals*						*Mobile Dispensaries Attendance*
			New cases			*Male patients*		*Female patients*				
			Male	*Female*	*Total cases*	*New cases*	*Deaths*	*New cases*	*Deaths*	*Total cases*	*Total deaths*	
A	26. Tetanus	061	1	—	1	61	23	42	22	103	45	—
A	27. Anthrax	062	—	—	—	—	—	—	—	—	—	—
A	28. Acute poliomyelitis	080	—	—	—	8	—	8	—	16	—	—
A	29. Acute infectious encephalitis ...	082	—	—	—	—	—	—	—	—	—	—
A	30. Late effects of acute poliomyelitis and acute infectious encephalitis ...	081,083	—	—	—	21	—	12	1	33	1	—
A	31. Smallpox	084	—	—	—	—	—	—	—	—	—	—
A	32. Measles	085	—	—	—	1	—	—	—	1	—	—
A	33. Yellow fever	091	—	—	—	—	—	—	—	—	—	—
A	34. Infectious hepatitis	092	36	44	80	37	5	11	2	48	7	13
A	35. Rabies	094	—	—	—	—	—	—	—	—	—	—
A	36.—(*a*) Louse-borne epidemic typhus ...	100	—	—	—	—	—	—	—	—	—	—
	(*b*) Flea-borne endemic typhus (murine)	101	—	—	—	—	—	—	—	—	—	—
	(*c*) Tick-borne epidemic typhus ...	104	—	—	—	—	—	—	—	—	—	—
	(*d*) Mite-borne typhus	105	—	—	—	—	—	—	—	—	—	—
	(*e*) Other and unspecified typhus	102,103 106–108	—	—	—	—	—	—	—	—	—	—
A	37.—(*a*) Vivax malaria (benign tertian) ...	110	1	—	1	—	—	—	—	—	—	—
	(*b*) Malariæ malaria (quartan) ...	111	—	—	—	—	—	—	—	—	—	—
	(*c*) Falciparum malaria (malignant tertian)	112	—	1	1	—	—	—	—	—	—	—
	(*d*) Blackwater fever	115	—	—	—	—	—	—	—	—	—	—
	(*e*) Other and unspecified forms of malaria...	113,114 116,117	—	—	—	—	—	—	—	—	—	—
A	38.—(*a*) Schistosomiasis vesical (S. hæmatobium)	123·0	386	112	498	45	—	28	—	73	—	—
	(*b*) Schistosomiasis intestinal (S. Mansoni)	123·1	—	—	—	—	—	—	—	—	—	—
	(*c*) Schistosomiasis pulmonary (S. japonicum)	123·2	—	—	—	—	—	—	—	—	—	—
	(*d*) Other and unspecified Schistosomiasis	123·3	—	—	—	—	—	—	—	—	—	—

A	39. Hydatid disease	125	—	—	—	—	—	—	—	—	—	—
A	40.—(*a*) Onchocerciasis	127	—	—	—	1	—	2	—	3	—	—
	(*b*) Loiasis	—	—	—	—	—	—	—	—	—	—	—
	(*c*) Filariasis (bancrofti)	—	38	43	81	30	—	15	—	45	—	—
	(*d*) Other filariasis	—	—	—	—	—	—	—	—	—	—	—
A	41. Ankylostomiasis	129	2,400	3,473	5,873	208	—	223	1	431	1	5,294
A	42.—(*a*) Tapeworm (infestation) and other cestode infestations	126	1	—	1	—	—	2	—	2	—	—
	(*b*) Ascariasis	130·0	6,038	6,918	12,956	110	1	175	1	285	2	4,789
	(*c*) Guinea worm (dracunculosis) ...	130·3	72	47	119	8	—	7	—	15	—	—
	(*d*) Other diseases due to helminths	124,128 130·1,130·2	932	1,058	1,990	11	—	17	—	28	—	2,672
A	43.—(*a*) Lymphogranuloma venereum ...	037	—	—	—	—	—	1	—	1	—	—
	(*b*) Granuloma inguinale, venereal ...	038	—	—	—	—	—	—	—	—	—	—
	(*c*) Other and unspecified venereal diseases	039	2	1	3	3	—	—	—	3	—	—
	(*d*) Food poisoning infection and intoxication	049	—	—	—	2	—	4	1	6	1	—
	(*e*) Relapsing fever	071	—	—	—	—	—	—	—	—	—	—
	(*f*) Leptospirosis icterohaemorrhagica (Weil's disease)	072	—	—	—	—	—	—	—	—	—	—
	(*g*) Yaws	073	—	—	—	—	—	—	—	—	—	—
	(*h*) Chickenpox	087	5	3	8	3	—	1	—	4	—	—
	(*i*) Dengue	090	9	32	41	—	—	—	—	—	—	—
	(*j*) Trachoma	095	—	—	—	—	—	—	—	—	—	—
	(*k*) Sandfly fever	096·7	—	—	—	—	—	—	—	—	—	—
	(*l*) Leishmaniasis	120	—	—	—	—	—	—	—	—	—	—
	(*m*) (i) Trypanosomiasis gambiensis	121		—	—	—	—	—	—	—	—	—
	(ii) Trypanosomiasis rhodesiensis	—	—	—	—	—	—	—	—	—	—	—
	(iii) Other and unspecified Trypanosomiasis	—	—	—	—	—	—	—	—	—	—	—
	(*n*) Dermatophytosis	131	36	44	80	9	—	3	—	12	—	—
	(*o*) Scabies	135	2,127	2,061	4,188	47	—	41	—	88	—	10,505
	(*p*) All other diseases classified as infective and parasitic	036,054,059, 063,064,070, 074,086,088, 089,093,096·1 --096·6,096·8, 096·9,122, 132–134, 136–138	137	79	216	73	1	18	—	91	1	12

TABLE III—*continued*

Cause Groups	Detailed List Number	*Statistic Dispensaries and out-patients depts of hospital* New cases Male	New cases Female	Total cases	*Hospitals* Male patients New cases	Male patients Deaths	Female patients New cases	Female patients Deaths	Total cases	Total deaths	Mobile Dispensaries Attendancee
A 44. Malignant neoplasm of buccal cavity and pharynx	140–148	—	—	—	3	1	2	—	5	1	—
A 45. Malignant neoplasm of oesophagus ...	150	—	—	—	8	1	1	—	9	1	—
A 46. Malignant neoplasm of stomach ...	151	1	1	2	26	6	12	—	38	6	—
A 47. Malignant neoplasm of intestine, except rectum	152,153	1	—	1	4	1	3	1	7	2	—
A 48. Malignant neoplasm of rectum ...	154	—	—	—	3	—	2	—	5	—	—
A 49. Malignant neoplasm of larynx... ...	161	—	1	1	2	—	—	—	2	—	—
A 50. Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	162,163	—	—	—	10	3	1	—	11	3	—
A 51. Malignant neoplasm of breast ...	170	—	1	1	—	—	24	3	24	3	—
A 52. Malignant neoplasm of cervix uteri ...	171	—	5	5	—	—	123	8	123	8	—
A 53. Malignant neoplasm of other and unspecified parts of uterus ...	172–174	—	—	—	—	—	11	1	11	1	—
A 54. Malignant neoplasm of prostate ...	177	—	—	—	1	1	—	—	1	1	—
A 55. Malignant neoplasm of skin	190,191	1	—	1	3	—	1	—	4	—	—
A 56. Malignant neoplasm of bone and connective tissue	196,197	—	—	—	22	—	2	—	4	—	—
A 57. Malignant neoplasm of all other and unspecified sites	155–159,160 164,165,175, 176,178–181 192–195 198,199	—	—	—	18	6	22	6	40	12	—
A 58. Leukæmia and aleukæmia	204	—	—	—	5	1	2	—	7	1	—
A 59. Lymphosarcoma and other neoplasms of lymphatic and hæmatopoietic system	200–203,205	1	—	1	6	—	2	1	8	1	—
A 60. Benign neoplasms and neoplasms of unspecified nature	210–239	36	51	87	47	3	179	2	226	5	—
A 61. Nontoxic goiter	250,251	2	14	16	2	—	9	—	11	—	—
A 62. Thyrotoxicosis with or without goiter	252	—	5	5	2	—	7	—	9	—	—

A	63. Diabetes mellitus	260	89	94	183	98	7	122	9	220	16	29
A	64.—(*a*) Beriberi	280	—	—	—	1	—	—	—	1	—	—
	(*b*) Pellagra	281	41	98	139	16	—	66	5	82	5	7
	(*c*) Scurvy	282	—	—	—	1	—	1	—	2	—	17
	(*d*) Other deficiency states	283–286	1,088	1,742	2,830	126	11	104	10	230	21	2,980
A	65.—(*a*) Pernicious and other hyperchromic anæmias	290	18	59	77	1	—	—	—	1	—	—
	(*b*) Iron deficiency anæmias (hypochronic)	291	—	—	—	74	1	243	—	317	1	—
	(*c*) Other specified and unspecified anæmias	292–293	4,843	16,230	21,073	763	20	1,853	27	2,616	47	13,507
A	66.—(*a*) Asthma	241	1,514	1,513	3,027	309	7	248	2	557	9	2,100
	(*b*) All other allergic disorders endocrine, metabolic and blood diseases	240 242–245 253,254 270–277 287–289 294–299	243	322	565	18	3	19	—	37	3	87
A	67. Psychoses	300–309	1	2	3	254	—	130	—	384	—	—
A	68. Psychoneuroses and disorders of personality	310–324,326	29	26	55	81	—	47	1	128	1	3
A	69. Mental deficiency	325	14	10	24	28	—	29	—	57	—	—
A	70. Vascular lesions affecting central nervous system	330–334	75	9	84	138	29	55	9	193	38	63
A	71. Nonmeningococcal meningitis ...	340	—	—	—	28	20	12	9	40	29	—
A	72. Multiple sclerosis	345	—	—	—	—	—	—	—	—	—	—
A	73. Epilepsy	353	135	99	234	94	1	44	—	138	1	22
A	74. Inflammatory diseases of eye	370–379	1,525	1,352	2,877	84	—	86	—	170	—	1,050
A	75. Cataract	385	190	215	405	137	—	210	—	347	—	22
A	76. Glaucoma	387	15	8	23	2	—	3	—	5	—	—
A	77,—(*a*) Otitis externa	390	439	493	932	19	—	4	—	23	—	962
	(*b*) Otitis media and mastoiditis ...	391–393	828	865	1,693	43	—	33	1	76	1	604
	(*c*) Other inflammatory diseases of ear	394	1,090	1,075	2,165	3	—	5	—	8	—	559
A	78.—(*a*) All other diseases and conditions of eye	380–384 386,388 389	794	810	1,604	71	—	52	—	123	—	25
	(*b*) All other diseases of the nervous system and sense organs	341–344 350–352 354–357 360–369 395–398	1,813	2,330	4,143	195	4	111	4	306	8	1,721

TABLE III—*continued*

Cause Groups	Detailed List Number	Statistic Dispensaries out-patient depts. of hospitals			Hospitals						Mobile Dispen-saries Attend-ances
		New cases			Male patients		Female patients				
		Male	*Female*	*Total cases*	*New cases*	*Deaths*	*New cases*	*Deaths*	*Total cases*	*Total deaths*	
A 79. Rheumatic fever	400–402	6	3	9	15	—	20	1	35	1	3
A 80. Chronic rheumatic heart disease ...	410–416	8	16	24	24	3	15	2	39	5	—
A 81. Arteriosclerotic and degenerative heart disease	420–422	23	29	52	92	25	66	19	158	44	47
A 82. Other diseases of heart	430–434	291	528	819	174	32	113	26	287	58	328
A 83. Hypertension with heart disease ...	440–443	33	23	56	16	3	6	—	22	3	53
A 84. Hypertension without mention of heart	444–447	326	484	810	50	3	39	—	89	3	45
A 85. Diseases of arteries	450–456	76	73	149	126	11	26	2	152	13	96
A 86. Other diseases of circulatory system ...	460–468	490	339	829	201	1	81	2	282	3	31
A 87. Acute upper respiratory infections ...	470–475	1,650	2,253	3,903	39	1	34	—	73	1	7,121
A 88. Influenza	480–483	15,120	15,859	30,979	477	1	380	2	857	3	8,029
A 89. Lobar pneumonia	490	28	25	53	166	7	61	2	227	9	—
A 90. Bronchopneumonia	491	19	22	41	79	17	65	12	144	29	11
A 91 Primary atypical, other and unspecified pneumonia	492,493	20	13	33	86	16	34	6	120	22	—
A 92. Acute bronchitis	500	963	787	1,750	135	4	85	4	220	8	729
A 93. Bronchitis, chronic and unqualified ...	501,502	1,657	1,236	2,893	416	15	285	6	701	21	869
A 94. Hypertrophy of tonsils and adenoids	510	339	503	842	51	—	68	—	119	—	124
A 95. Empyema and abscess of lung ...	518,521	6	2	8	13	—	11	1	24	1	—
A 96. Pleurisy	519	36	25	61	88	3	27	1	115	4	—
A 97.—(*a*) Pneumoconiosis	523	—	—	—	1	—	—	—	1	—	—
(*b*) All other respiratory diseases	511–517 520–522 524–527	837	854	1,691	91	5	47	3	138	8	7
A 98.—(*a*) Dental caries	530	4,924	6,050	10,974	79	—	85	—	164	—	101
(*b*) All other diseases of teeth and supporting structures	531–535	818	649	1,467	63	—	51	—	114	—	1,190
A 99. Ulcer of stomach	540	9	1	10	11	1	3	—	14	1	—
A 100. Ulcer of duodenum	541	81	9	90	268	6	16	—	284	6	—
A 101. Gastritis and duodenitis	543	676	2,098	2,774	23	—	16	—	39	—	2,789
A 102. Appendicitis	550–553	39	81	120	162	1	293	—	455	1	—
A 103. Intestinal obstruction and hernia ...	560,561,570	99	23	122	246	16	46	5	292	21	—
A 104.—(*a*) Gastro-enteritis and colitis between 4 weeks and 2 years	571·0	1,530	1,428	2,958	59	12	39	8	98	20	289

(b) Gastro-enteritis and colitis, ages 2 years and over	571·1	1,269	1,119	2,388	126	16	95	14	221	[illegible]	[illegible]
(c) Chronic enteritis and ulceritive colitis	572	30	53	83	48	8	41	6	89	14	1
A 105. Cirrhosis of liver	581	11	15	26	32	2	34	3	66	5	1
A 106. Cholelithiasis and cholecystitis ...	584,585	67	74	141	83	2	63	—	146	2	33
A 107. Other diseases of digestive system	536–539 542,544,545 573–580,582 583,586,587	9,608	10,990	20,598	671	26	389	15	1,060	41	5,174
A 108. Acute nephritis	590	16	9	25	17	4	19	1	36	5	8
A 109. Chronic, other and unspecified nephritis...	591–594	149	229	378	168	22	145	16	313	38	128
A 110. Infections of kidney	600	27	54	81	17	—	33	1	50	1	—
A 111. Calculi of urinary system	602,604	15	6	21	63	—	12	—	75	—	1
A 112. Hyperplasia of prostrate	610	3	—	3	25	4	—	—	25	4	—
A 113. Diseases of breast	620,621	—	233	233	—	—	57	—	57	—	27
A 114.—(a) Hydrocele	613	106	—	106	137	—	—	—	137	—	1
(b) Disorders of menstruation ...	634	—	2,005	2,005	—	—	191	—	191	—	403
(c) All other diseases of the genito-urinary system	601,603 605–609 611–612 614–617 622–633 635–637	1,102	2,074	3,176	322	3	410	3	732	6	218
A 115. Sepsis of pregnancy, childbirth and the puerperium	640,641,681, 682,684	—	69	69	—	—	16	1	16	1	—
A 116. Toxaemias of pregnancy and the puerperium	642,652,685, 686	—	132	132	—	—	211	25	211	25	—
A 117. Hæmorrhage of pregnancy and child-birth	643,644,670– 672	—	10	10	—	—	23	7	23	7	—
A 118. Abortion without mention of sepsis or toxaemia	650	—	172	172	—	—	420	3	420	3	—
A 119. Abortion with sepsis	651	—	—	—	—	—	6	1	6	1	—
A 120.—(a) Other complications of pregnancy, childbirth and the puerperium	645–649 673–680 683 687–689	—	4,883	4,883	—	—	695	17	695	17	285
(b) Delivery without complications ...	660	—	—	—	—	—	2,267	—	2,267	—	—
A 121. Infections of skin and subcutaneous tissue	690–698	7,189	5,082	12,271	867	3	436	4	1,303	7	2,750
A 122. Arthritis and spondilitis	720–725	329	438	767	123	1	80	1	203	2	182
A 123. Muscular rheumatism and rheumatism, unspecified	726,727	3,354	4,506	7,860	206	—	172	—	378	—	5,484
A 124. Osteomyelitis and periostitis	730	7	8	15	47	—	17	—	64	—	—

TABLE III—*continued*

Cause Groups	*Detailed List Number*	*Statistic Dispensaries of out-patients depts. of hospitals*			*Hospitals*						*Mobile Dispensaries Attendances*
		New cases			*Male patients*		*Female patients*				
		Males	*Female*	*Total cases*	*New cases*	*Deaths*	*New cases*	*Deaths*	*Total cases*	*Total deaths*	
A 125. Ankylosis and acquired musculoskeletal deformities	737 745–749	20	7	27	24	—	7	—	31	—	—
A 126.—(*a*) Chronic ulcer of skin (including tropical ulcer)	715	69	40	109	42	—	11	—	53	—	3
(*b*) All other diseases of skin	700–714 716	2,106	2,038	4,144	131	1	110	—	241	1	1,453
(*c*) All other diseases of musculoskeletal system	731–736 738–744	163	74	237	75	1	28	—	103	1	6
A 127. Spina bifida and meningocele	751	3	1	4	12	1	2	—	14	1	—
A 128. Congenital malformations of circulatory system	754	—	—	—	—	—	—	—	—	—	—
A 129. All other congenital malformations	750,752,753 755–759	14	9	23	23	1	31	1	54	2	—
A 130. Birth injuries	760,761	—	1	1	6	6	3	2	9	8	—
A 131. Postnatal asphyxia and atelectasis ...	762	—	—	—	19	18	7	6	26	24	—
A 132.—(*a*) Diarrhoea of newborn (under 4 weeks)	764	2	3	5	1	—	1	1	2	1	83
(*b*) Ophthalmia neonatorum	765	—	1	1	3	—	—	—	3	—	—
(*c*) Other infections of newborn	763 766–768	35	34	69	7	3	3	3	10	6	—
A 133. Hæmolytic disease of newborn ...	770	—	—	—	1	—	1	1	2	1	—
A 134. All other defined diseases of early infancy	769,771,772	11	12	23	31	19	19	9	50	28	181
A 135. Ill-defined diseases peculiar to early infancy, and immaturity unqualified	773–776	20	16	36	42	37	43	38	85	75	—
A 136. Senility without mention of psychosis	794	82	182	264	32	2	60	5	92	7	20
A 137.—(*a*) Pyrexia of unknown origin ...	788·8	1,111	1,469	2,580	58	—	51	2	109	2	12,452
(*b*) Observation, without need for further medical care	793	186	41	227	214	—	239	—	453	—	—
(*c*) All other ill-defined causes of mordibity	780–787 788·1–788·7 788·9 789–792 795	5,437	7,919	13,356	996	37	805	23	1,801	60	10,150

" E CODE ". ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONINGS AND VIOLENCE (EXTERNAL CAUSE)											
AE 138. Motor vehicle accidents	E 810–E 835	168	66	234	269	18	77	7	346	25	—
AE 139. Other transport accidents ...	E 800–E 802 E 840–E 866	690	88	778	231	8	66	4	297	12	—
AE 140. Accidental poisoning	E 870–E 895	5	9	14	31	3	20	1	51	4	—
AE 141. Accidental falls	E 900–E 904	3,871	1,377	5,248	691	4	250	—	941	4	574
AE 142. Accident caused by machinery ...	E 912	116	11	127	18	—	1	—	19	—	—
AE 143. Accident caused by fire and explosion of combustible material	E 916	25	20	45	7	—	12	4	19	4	—
AE 144. Accident caused by hot substance, corrosive liquid, steam, and radiation	E 917, E 918	441	244	685	124	15	104	13	228	28	43
AE 145. Accident caused by firearm	E 919	5	1	6	12	—	1	1	13	1	—
AE 146. Accidental drowning and submersion	E 929	—	—	—	6	—	3	—	9	—	—
AE 147.—(*a*) Foreign body entering eye and adnexa	E 920	497	61	558	19	—	—	—	19	—	—
(*b*) Foreign body entering other orifice	E 923	150	121	271	8	—	7	1	15	1	—
(*c*) Accidents caused by bites and stings of venemous animals and insects	E 927	117	102	219	3	—	1	—	4	—	—
(*d*) Other accidents caused by animals	E 928	423	217	640	7	—	6	—	13	—	—
AE 147. (*e*) All other accidental causes	E 910–E 911 E 913–E 915 E 921–E 922 E 924–E 926 E 930–E 965	18,518	4,762	23,280	1,112	9	266	2	1,378	11	497
AE 148. Suicide and self-inflicted injury ...	E 970–E 979	—	1	1	47	6	17	1	64	7	—
" E CODE "—*continued*											
AE 149. Homicide and injury purposely inflicted by other persons (not in war)	E 980–E 985	1,334	463	1,797	458	4	151	—	609	4	—
AE 150. Injury resulting from operations of war	E 990–E 999	—	—	—	—	—	—	—	—	—	—
TOTAL ...		118,931	129,118	248,049	15,039	674	15,159	499	30,198	1,173	111,849
Sub-total to A 137 *brought forward* ...		92,571	121,575	214,146	11,996	607	14,177	465	26,173	1,072	110,735

TABLE III—*continued*

Cause Groups	Detailed List Number	*Statistic Dispensaries of out-patients depts. of hospitals*			*Hospitals*						*Mobile Dispensaries Attendances*
		New cases		*Total cases*	*Male patients*		*Female patients*		*Total cases*	*Total deaths*	
		Male	*Female*		*New cases*	*Deaths*	*New cases*	*Deaths*			
"N CODE". ALTERNATIVE CLASSIFICATION OE ACCIDENTS, POISONINGS AND VIOLENCE (NATURE OF INJURY)											
AN 138. Fracture of skull	N 800–N 804	5	—	5	94	20	6	1	100	21	—
AN 139. Fracture of spine and trunk ...	N 805–N 809	47	15	62	88	6	27	5	115	11	2
AN 140. Fracture of limbs	N 810–N 829	574	218	792	476	2	180	—	656	2	—
AN 141. Dislocation without fracture ...	N 830–N 839	49	25	74	31	—	12	—	43	—	—
AN 142. Sprains and strains of joints and adjacent muscles	N 840–N 848	369	141	510	44	—	5	—	49	—	175
AN 143. Head injury (excluding fracture) ...	N 850–N 856	1,854	527	2,381	232	6	69	—	301	6	1
AN 144. Internal injury of chest, abdomen, and pelvis	N 860–N 869	—	1	1	8	3	1	1	9	4	—
AN 145. Laceration and open wounds ...	N 870–N 908	11,338	3,195	14,533	906	3	199	3	1,105	6	239
AN 146. Superficial injury, contusion and crushing with intact skin surface ...	N 910–N 929	10,833	2,873	13,706	820	—	274	—	1,094	—	650
AN 147 Effects of foreign body entering through orifice	N 930–N 936	647	182	829	22	—	7	1	29	1	—
AN 148. Burns	N 940–N 949	466	264	730	134	15	118	17	252	32	47
AN 149. Effects of poisons	N 960–N 979	5	10	15	69	8	33	2	102	10	—
AN 150. All other and unspecified effects of external causes	N 950–N 959 N 980–N 999	173	92	265	119	4	51	4	170	8	—
TOTAL ...		111,931	129,118	248,049	14,039	674	15,159	499	30,198	1,173	111,849

TABLE IV

Main Causes of Morbidity

Disease	*In-patients at hospitals*	*Out-patients at hospitals and dispensaries*
Tuberculosis (all forms)	555	149
Syphilis and its sequelae	153	475
Dysentery (all forms)	180	2,525
Schistosomiasis vesical	73	498
Filariasis	45	81
Ankylostomiasis	431	5,873
Ascariasis	285	12,956
Scabies	88	4,188
Avitaminosis and other deficiency states ...	315	2,969
Anaemias	2,934	21,150
Asthma	557	3,027
Inflammatory diseases of eye...	170	2,877
Influenza	857	30,979
Pneumonias	491	127
Bronchitis	921	4,643
Diseases of teeth and supporting structures...	278	12,441
Gastro-enteritis and colitis (between 4 weeks and 2 years)	98	2,958
Gastro-enteritis and colitis (between 2 years and over)	310	2,471
Complications of pregnancy, childbirth and the puerperium	1,371*	5,266
Infections of skin and subcutaneous tissue...	1,303	12,271
Other diseases of skin and subcutaneous tissue	241	4,144
Muscular rheumatism and rheumatism unspecified...	378	7,860
Accidents, poisonings and violence	4,025	33,903

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* Excluding 2,267 normal deliveries.

TABLE V

HOSPITAL STATISTICS

(Corresponding to the 1948 International Classification)

Group		*Male*		*Female*		*Total*	
		cases	*deaths*	*cases*	*deaths*	*cases*	*deaths*
I	...	1,350	81	1,032	55	2,382	236
II	...	138	23	387	22	525	45
III	...	563	25	569	26	1,132	51
IV	...	848	24	2,103	27	2,951	51
V	...	363	—	206	1	569	1
VI	...	814	54	615	23	1,429	77
VII	...	698	78	366	52	1,064	130
VIII	...	1,642	69	1,097	37	2,739	106
IX	...	1,871	90	1,171	51	3,042	141
X	...	749	33	867	21	1,616	54
XI	...	—	—	3,638	54	3,638	54
XII	...	998	4	546	4	1,544	8
XIII	...	517	2	315	1	832	3
XIV	...	35	2	33	1	68	3
XV	...	110	83	77	60	187	143
XVI	...	1,300	39	1,155	30	2,455	69
XVII	...	3,043	67	982	34	4,025	101
TOTAL	...	15,039	674	15,159	499	30,198	1,173

Group I—Infective and parasitic diseases
II—Neoplasms
III—Allergic, endocrine system, metabolic and nutritional diseases
IV—Diseases of the blood and blood-forming organs
V—Mental, psychoneurotic and personality disorders
VI—Diseases of the nervous system and sense organs
VII—Diseases of the circulatory system
VIII—Diseases of the respiratory system
IX—Diseases of the digestive system
X—Diseases of the genito-urinary system
XI—Deliveries and complications of pregnancy, childbirth and the puerperium
XII—Diseases of the skin and cellular tissue
XIII—Diseases of the bones and organs of movement
XIV—Congenital malformations
XV—Certain diseases of early infancy
XVI—Symptoms, senility and ill—defined conditions
XVII—Accidents, poisonings and violence.

(*c*) *Dentists.*—The conditions governing the practice of dentistry are identical to those applicable to doctors. The majority of the dentists have qualified in the United Kingdom.

(*d*) *Nurses and midwives* must be registered at the Medical and Health Department before being allowed to practise. Only those trained in Great Britain and in Mauritius are eligible for registration.

(*e*) *Sanitary Inspectors* are employed by the Department and the Local Authorities. Only those trained in Great Britain and in Mauritius are employed.

21.—(*a*) *Institutions for the training of medical and health staff.*—There are no facilities available locally for training doctors and dentists.

(*b*) Persons wishing to obtain the local diploma of pharmacist study under private tuition and have to pass an examination, the subjects of which are fixed by regulations framed under the Pharmacy Ordinance 1912. The prospective candidate must, however, fulfil the following conditions : he must have been registered as a Student and served as apprentice for a full period of 4 years to one or more pharmacists before he is allowed to sit for the examination for assistant pharmacists and, afterwards, for a full period of 2 years as assistant pharmacists to one or more pharmacists before he is allowed to sit for the final examination which qualifies him to practise as a pharmacist.

(*c*) The training of the nursing staff has, since 1948, been raised to a standard much higher than that accepted in pre-war days. The course of training which was limited to two years, including midwifery, has been extended to three years for the general nursing certificate with an additional year for the midwifery certificate. The examinations are set on a syllabus which is very similar to the British one and the object of reciprocity with Great Britain is constantly kept in mind. The educational standard of nursing students varies from the local Sixth Standard to the Cambridge School Certificate and in some cases they are given an educational test prior to enlistment. The two training schools are at Victoria and Civil Hospitals.

(*d*) In the case of midwives, who are also trained at Civil and Victoria Hospitals, the course of training extends over 18 months, one third of that time being spent on the District Midwifery Service.

After passing their final examination, nurses and midwives are generally employed by the Department, where they acquire additional experience. Subsequently some resign to go into private practice or to join the staff on sugar estate hospitals.

Two candidates are undergoing a course of training in orthopaedic nursing in the United Kingdom, and consideration is being given to the training of a third candidate.

(*e*) Sanitary Inspectors are trained during 18 months on a syllabus similar to the one of the Royal Sanitary Institute. The minimum educational qualification required for their enlistment as Sanitary Cadet is the Cambridge School Certificate. After passing their final examination, they are all employed by the Medical and Health Department.

PART V

Public Health

VITAL STATISTICS

22. The vital statistics for the year 1953 are analysed below, the figures within brackets being those for the year 1952.

Area of Mauritius 720 square miles.

	Males	*Females*	*Total*
Estimated population on 31.12.53	262,539	262,328	524,867
Estimated mid-year population	—	—	516,525
Density per square mile : 717 (696)	—	—	—
No. of marriages : 3,473 (4,094)	—	—	—
Marriage rate per 1,000 population 13·4 (16·3)	—	—	—
Live births	12,110	11,786	23,896
Live births per 1,000 population 46·3 (48)	—	—	—
Still births 1,568 (1,575)	—	—	—
Still birth rate per 1,000 live births 6·6 (6·5)	—	—	—
Deaths	4,245	4,054	8,299
Infant Mortality	1,230	1,005	2,235
Infant mortality rate per 1,000 births 93·5 (80·8)	—	—	—
Crude death rate per 1,000 population 16·1 (14·8)	—	—	—

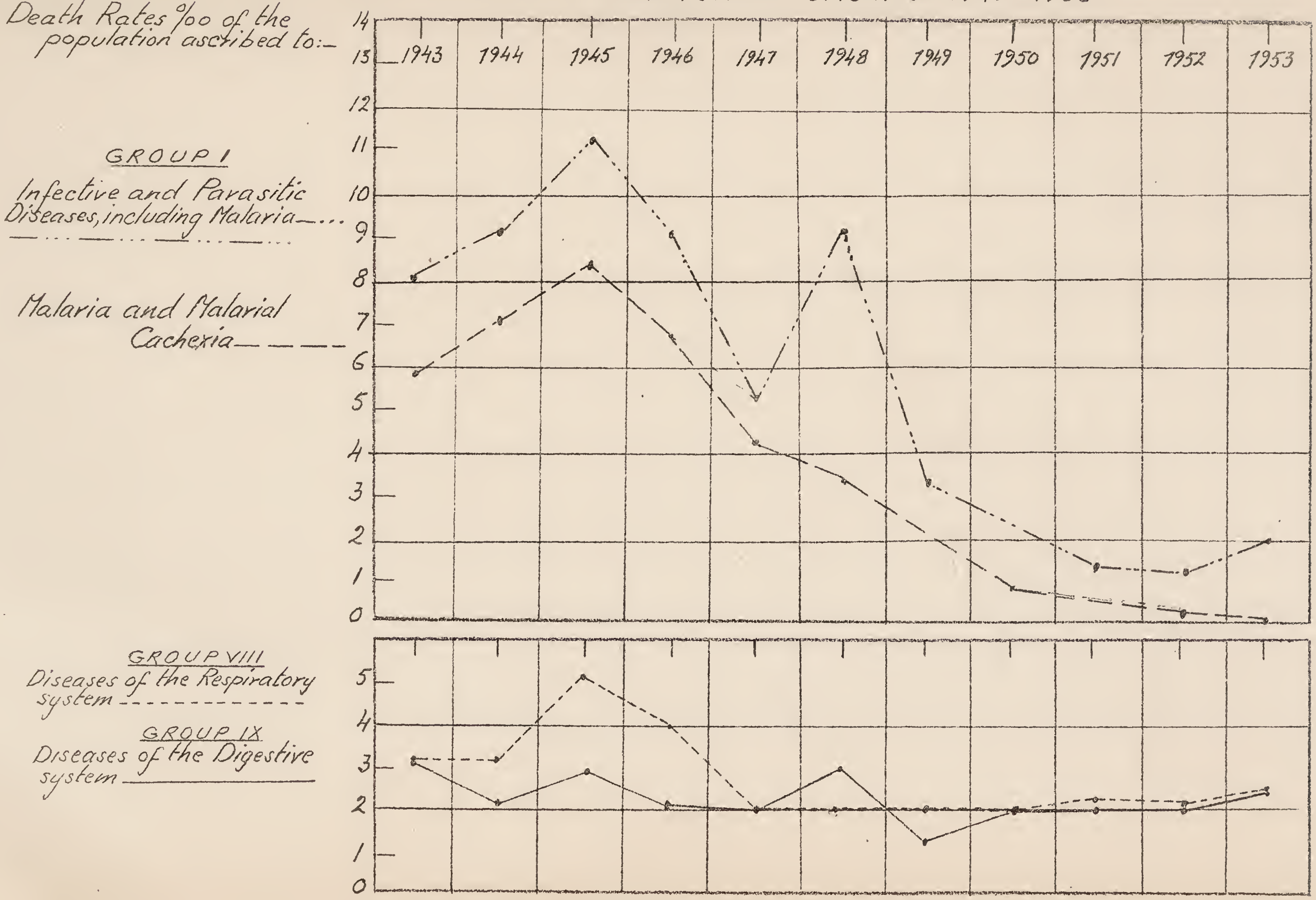
An analysis of the percentage contribution to the total number of deaths occurring in 1953 made by the more important groups of diseases is shown below together with corresponding figures for the four previous years.

Group	*Percentage of total number of deaths*				
	1949	*1950*	*1951*	*1952*	*1953*
1. Infective and parasitic diseases	21·7	15·1	11·9	9·6	11·8
4. Diseases of the blood and blood-forming organs	6·4	5·8	6·7	6·9	6·0
6. Diseases of the nervous system and sense organs	4·9	6·0	6·0	6·1	6·1
7. Diseases of the circulatory system 16. Senility, old age	8·3	9·4	8·9	10.3	11.0
8. Diseases of the respiratory system	11·2	15·1	14·8	15·5	15·9
9. Diseases of the digestive system	14·7	14·1	18·5	17·5	15·3
15. Diseases peculiar to 1st year of life	11·4	12·1	11·0	11·4	9·7

The downward trend in mortality caused by infective and parasitic diseases is the only significant feature revealed by the above figures and appears to have been halted in 1953 by the whooping cough epidemic to which reference has already been made.

The graph at Fig. 1 illustrates the fall in the principal death-dealing diseases for the period 1943–53.

COLONY DEATH RATES PER 1,000 POPULATION FROM PRINCIPAL CAUSES 1943-1953



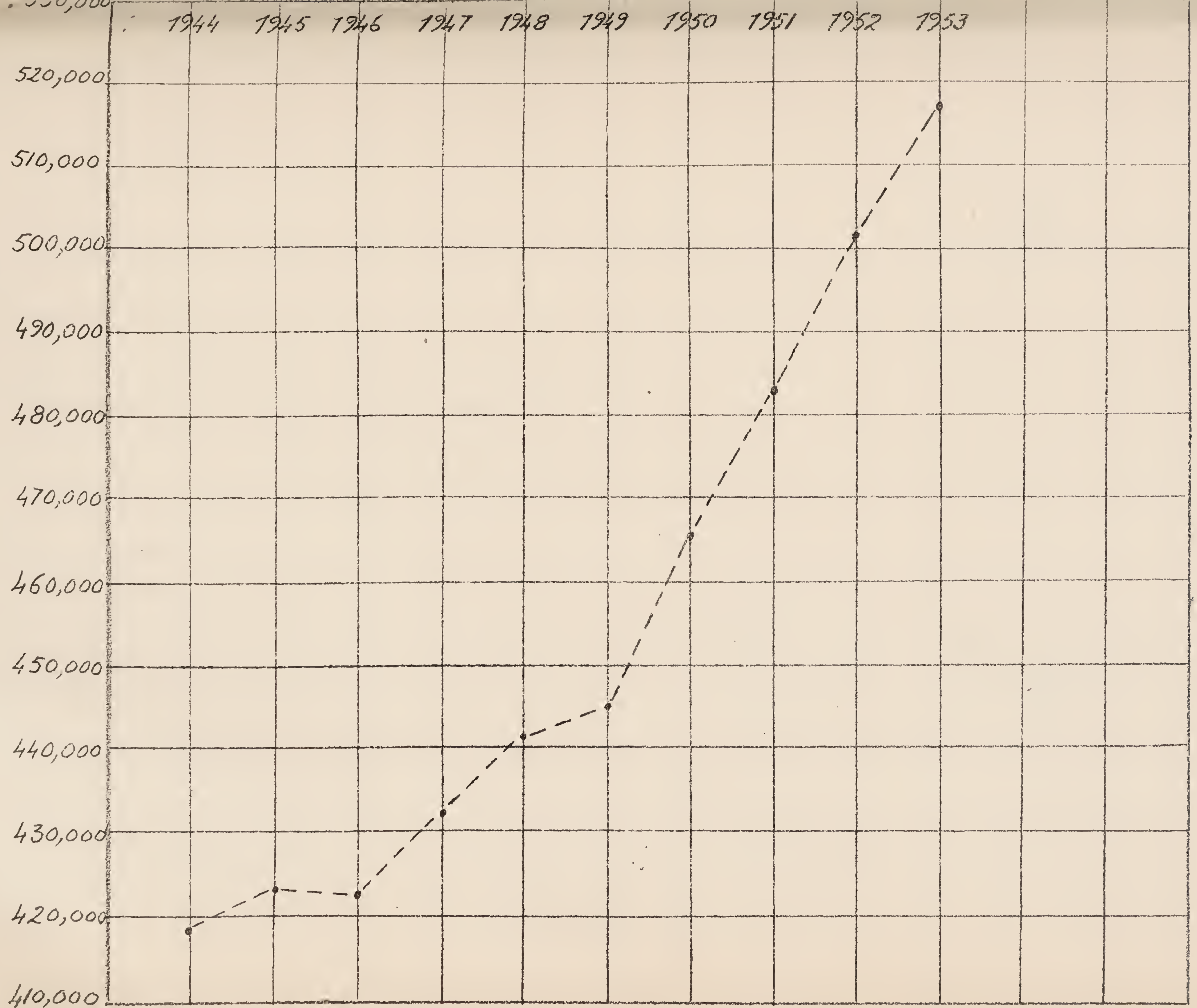
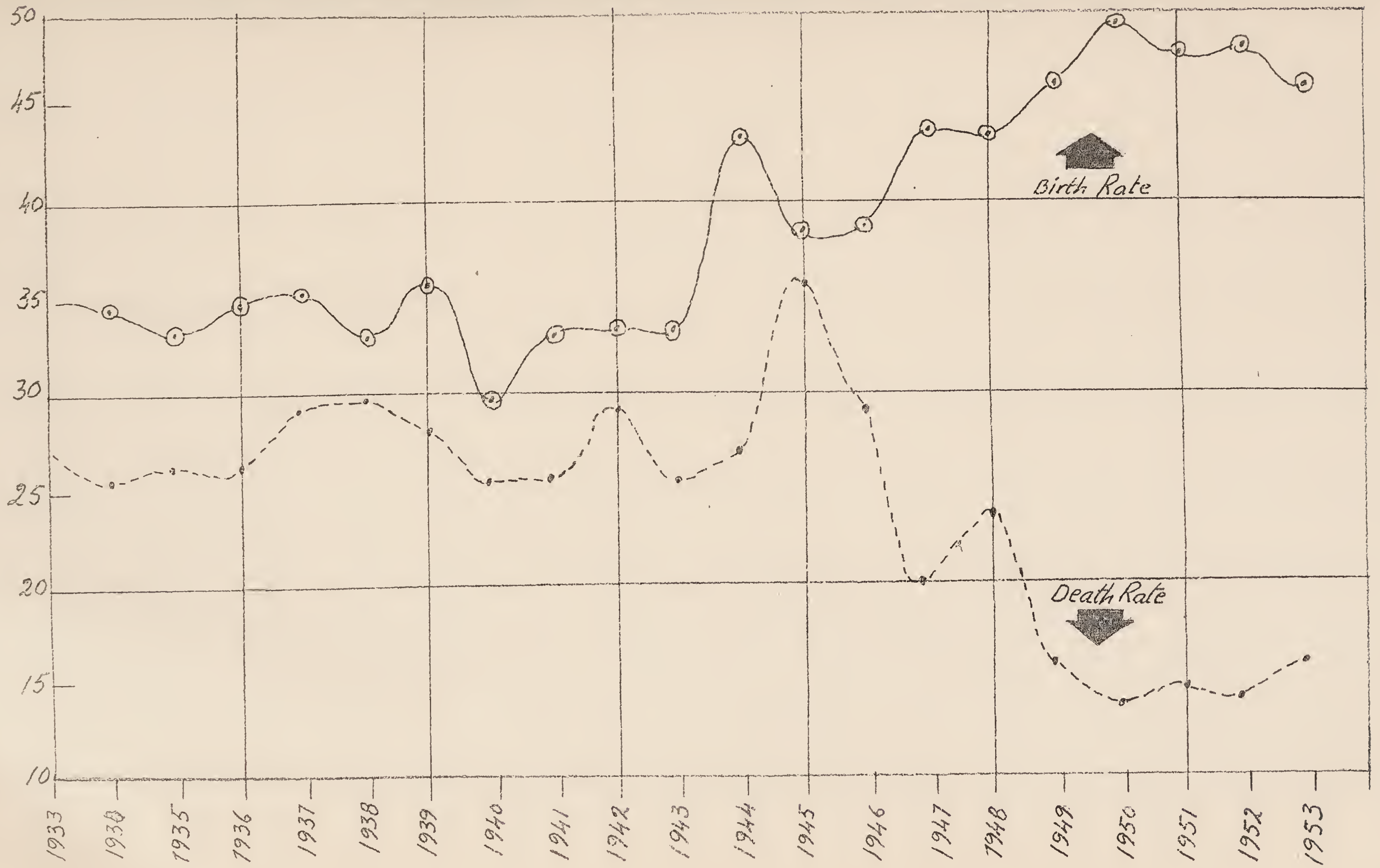
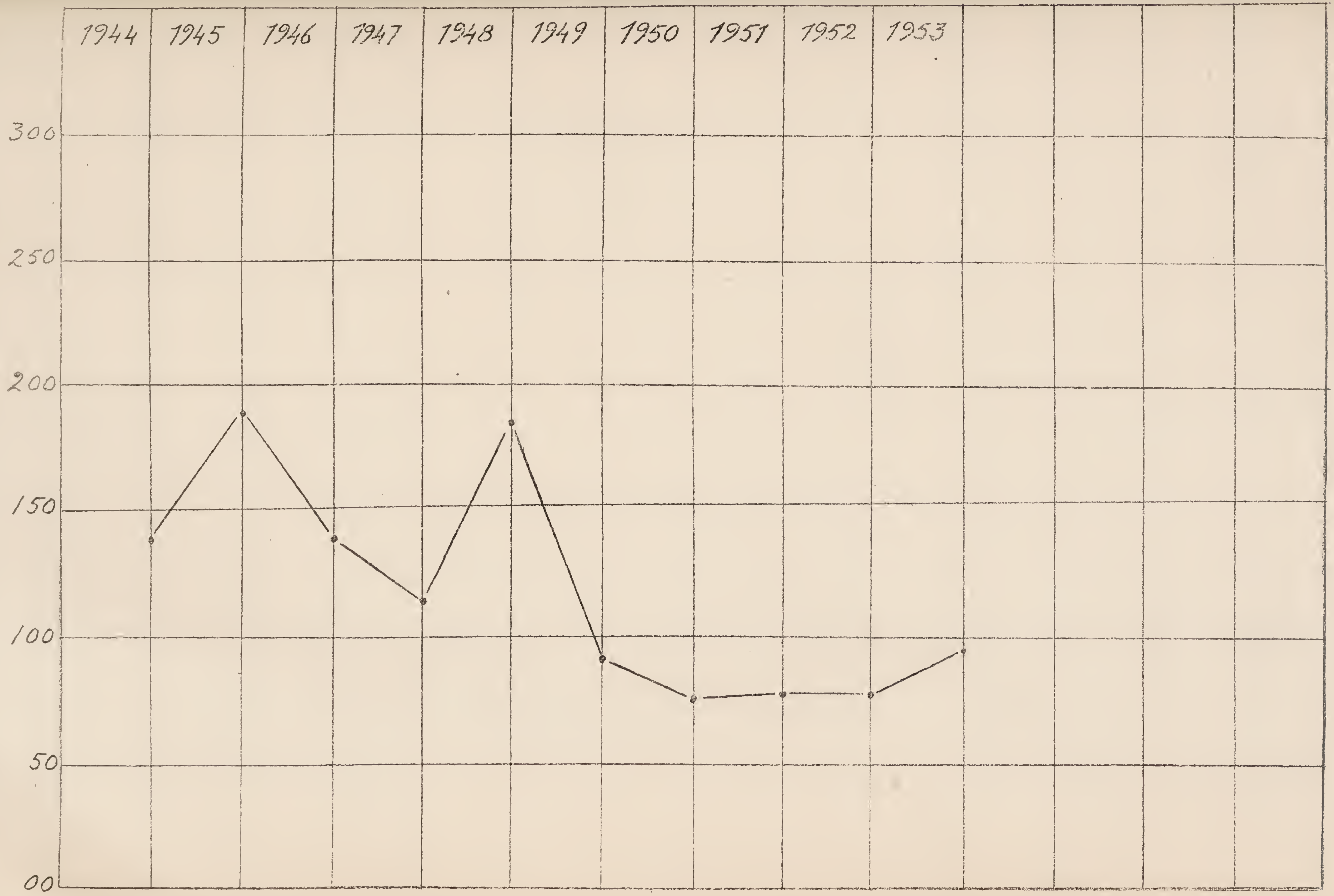

1944
1945
1946
1947
1948
1949
1950
1951
1952
1953
520,000
510,000
500,000
490,000
480,000
470,000
460,000
450,000
440,000
430,000
420,000
410,000

FIGURE III

CRUDE BIRTH AND DEATH RATES 1933 TO 1953



INFANT MORTALITY RATE 1944-1953



(i) *Population*

23. An excess of 15,997 in the number of births as compared with the number of deaths has caused an increase of population which has been such a marked feature in recent years.

The contribution to this increase, of the excess of arrivals over departures, has been small and is represented by the figure of 198.

The rate of natural increase for the last five years has been 30·19 per thousand as compared with 10·32 per thousand for the ten year period before 1949.

The graph at Fig. II shows the population trend for the 10–year period 1944–53, whilst the graph at Fig. III indicates the trend of crude birth and death rates for period 1933–53.

(ii) *Infantile Mortality*

24. The infantile mortality rate was 93·5 per thousand. The comparative figures for the nine preceding years have already been given in the foreword to this report.

Deaths under 5 years of age were distributed as follows, the corresponding figures for 1952 for total deaths being shown with brackets :

Age	*Males*	*Females*	*Totals*
Under 3 months	747	599	1,346 (1,216)
3 months and under 6 months	211	186	397 (277)
6 months and under 1 year	272	220	492 (455)
1 year and under 2 years	261	314	575 (430)
2 years and under 3 years	203	229	432 (325)
3 years and under 4 years	98	156	254 (139)
4 years and under 5 years	54	70	124 (54)
TOTALS ...	1,846	1,774	3,620 (2,896)

The setback revealed by the above figures has affected children in the age group 1–5 more than those in the age group 0–1 year. The largest proportional increases took place in the children aged 3–5 years and may have been due to a flare-up of previous latent lung infection by the supervention of whooping cough.

To deal with this scourge, a campaign scheduled to start early in January 1954 has been arranged. The hazard to child life of this dreaded disease need not be emphasized.

The graph at Fig. IV indicates the trend of infant mortality rate for the 10–year period 1944–53.

(iii) *Deaths*

25. Total deaths amounted to 8,299 ; the main causes have already been analysed.

Table VI shows the number of deaths from the principal causes for the ten–year period 1944–53.

TABLE VI

DEATHS FROM PRINCIPAL CAUSES 1944–53 (INTERNATIONAL LIST, 1938 REVISION)

Year	*Group I*	*Group II*	*Group III*	*Group IV*	*Group V*	*Group VI*	*Group VII*	*Group VIII*	*Group IX*	*Group X*
1944	3,807	57	123	255	2	412	249	1,166	1,344	470
1945	4,898	53	178	894	2	402	234	1,538	2,283	566
1946	3,862	57	112	833	2	407	239	1,138	1,969	525
1947	2,366	76	111	577	4	339	206	893	1,026	300
1948	4,052	88	130	451	—	378	294	1,318	1,078	262
1949	1,603	121	127	470	—	365	381	831	1,085	286
1950	975	122	103	378	—	387	410	978	913	261
1951	863	103	134	483	1	437	399	1,072	1,335	272
1952	713	128	149	515	1	457	441	1,150	1,301	315
1953	980	139	176	504	6	515	559	1,323	1,269	340

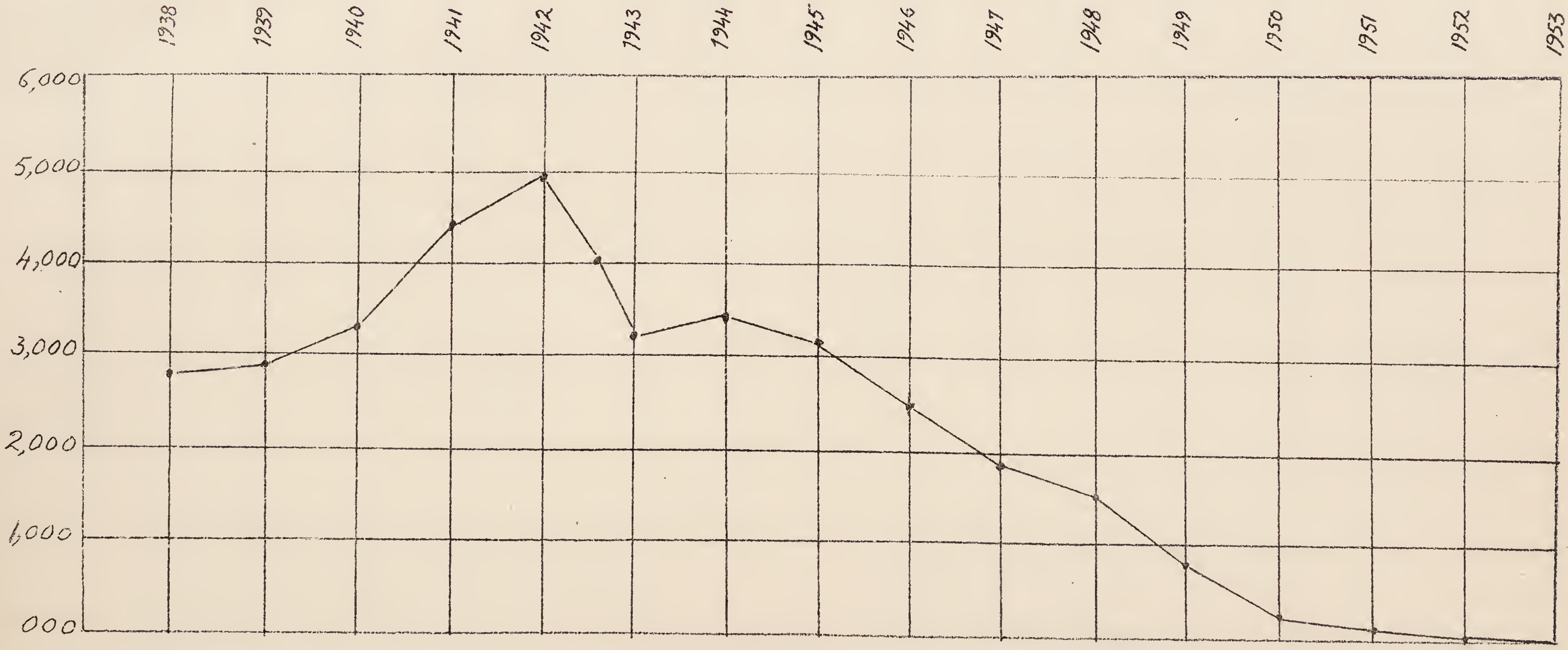
Year	*Group XI*	*Group XII*	*Group XIII*	*Group XIV*	*Group XV*	*Group XVI*	*Group XVII*	*Group XVIII*	*Total Deaths*
1944	171	70	5	7	1,207	533	204	1,273	11,355
1945	266	85	7	5	1,427	583	239	1,617	15,277
1946	185	67	7	1	1,193	489	186	1,256	12,528
1947	106	47	3	6	1,129	381	172	938	8,680
1948	84	44	5	9	1,099	285	171	859	10,518
1949	83	23	6	5	842	226	189	741	7,384
1950	86	34	7	10	782	202	193	612	6,453
1951	78	28	8	14	793	248	197	743	7,208
1952	82	15	19	11	852	328	205	765	7,447
1953	69	22	38	9	803	357	209	981	8,299

GROUP I—Infective and parasitic diseases
II—Cancer and other tumours
III—Rheumatism, diseases of nutrition and of endocrine glands, other general diseases and deficiency diseases
IV—Diseases of blood and blood-forming organs
V—Chronic poisoning and intoxication
VI—Diseases of the nervous system and sense organs
VII—Diseases of the circulatory system
VIII—Diseases of the respiratory system
IX—Diseases of the digestive system

GROUP X—Diseases of urinary and genital organs
XI—Diseases of pregnancy, childbirth and puerperal state
XII—Diseases of skin and cellular tissue
XIII—Diseases of bones and organs of movement
XIV—Congenital malformation
XV—Diseases peculiar to the first year of life
XVI—Senility, old age
XVII—Death from violence
XVIII—Ill-defined causes of death.

FIGURE V

ADMISSIONS TO HOSPITAL _ MALARIA _ 1938-1953



The following table shows births, still-births, death rates, marriage rates and natural increase of the population, and is intended to supply comparative data for the last ten years :—

	Births		*Still Births*		*Death and Marriage rates 1944–53*			
Year	*Births*	*Rate per 1000 population*	*No. of still births*	*Rate % total births*	*Infant mortality rate*	*Total death rate*	*Marriage rate per 1,000 population*	*Natural increase of population*
1944 ...	18,258	43·5	1,319	7·2	141·0	27·1	13·0	6,903
1945 ...	16,290	38·5	1,484	9·1	188·0	36·1	12·0	1,013
1946 ...	16,427	38·7	1,374	8·4	145·2	29·5	18·1	3,899
1947 ...	18,926	43·8	1,277	6·7	113·9	20·1	17·5	10,246
1948 ...	19,039	43·1	1,316	6·9	186·2	23·8	14·7	8,521
1949 ...	20,472	46·0	1,364	6·7	91·0	16·6	16·3	13,088
1950 ...	23,110	49·7	1,410	6·1	76·3	13·9	13·1	16,657
1951 ...	22,968	47·5	1,401	6·1	83·5	14·9	12·7	15,760
1952 ...	24,120	48·0	1,575	6·5	80·8	14·8	16·3	16,673
1953 ...	23,896	46·3	1,568	6·6	93·5	16·1	13·4	15,597

II. Public Health

(i) COMMUNICABLE AND INFECTIOUS DISEASES

26. *Malaria and anti-malarial measures.*—One of the greatest achievements of the public health service in the history of Mauritius is represented by the reduction to such negligible proportions of the disease malaria that it has ceased to be an economic problem to the island. Malaria, which until a few years ago, caused the death of from 5 to 6 per thousand of the population each year, now accounts for about 1 per 3,000, while admissions to hospital because of that disease which used to average 3,000 per annum was nil in 1953 as compared with 3 in 1952, 98 in 1951, 209 in 1950 and 804 in 1949. The deaths ascribed to the disease per 1,000 living from 1946 to 1953 were as shown in Table VII.

TABLE VII

Year	*Deaths abscribed to malaria*	*Rate per 1,000 population*	*Percentage of deaths due to malaria to total deaths*
1946 ...	2,918	6·88	23·29
1947 ...	1,782	4·12	20·53
1948 ...	1,580	3·58	15·02
1949 ...	936	2·11	12·68
1950 ...	388	0·83	6·01
1951 ...	285	0·59	3·95
1952 ...	188	0·37	2·52
1953 ...	61	0·12	0·73

The hospital figures being the most accurate that can be given, the following table (Table VIII) is published to indicate the number of malaria cases treated in the hospitals for period 1943–53 and the graph at Fig. V to demonstrate the reduction in hospital admissions since 1938.

TABLE VIII

Year	*Cases of malaria treated in hospitals*	*Deaths in hospitals*	*Case mortality*
1943	3,215	81	2·52
1944	3,512	104	2·96
1945	3,244	148	4·57
1946	2,522	106	4·20
1947	1,989	76	3·82
1948	1,576	66	4·19
1949	804	43	5·35
1950	209	10	4·78
1951	98	4	4·06
1952	3	—	—
1953	Nil	Nil	Nil

27. *House spraying.*—The house spraying season which had begun in October 1952 ended in May 1953. In this season the dwelling houses and outbuildings in the coastal areas of the island were sprayed, on the East coast with DDT and on the West coast with BHC. A total of 54,485 houses consisting of 260,992 rooms were sprayed with 81,701 gallons of insecticide in this spraying season.

Between May and September the only buildings sprayed were hospitals, orphanages, public markets, police stations, airport and other Government buildings. The total amount of spraying in this period amounted to 178 buildings of 1,280 rooms with 1,092 gallons of insecticide.

In September the house spraying season began again and for this season that will end in March 1954 DDT will be sprayed in the coastal areas of the island except that the area in the South of the island will not be sprayed at all, between Ferney Sugar Estate and Baie du Cap. This area will be left unsprayed unless cases of malaria are found there during the season. On the outskirts of Port Louis BHC will be sprayed twice in the season.

From September up to 31st December, 1953 the figures for the amount of spraying already completed are: 29,458 houses of 141,733 rooms with 44,205 gallons of insecticide.

In the period May to September the staff gave assistance to the Malaria Maintenance Branch in clearing and cleaning marshes, rivers and canals in coastal areas of the island.

MALARIA SURVEY WORK

Part I.—The search for malaria amongst Mauritian residents.

The work of the Infant Survey Unit continued during this year. This unit is responsible for taking blood smears from children under 3 years of age living in the coastal areas of the island. During the year 17,337 such smears were taken and 6 positive cases found (Q.T. 4., Unidentified 2).

In addition to blood smears taken by the Infant Survey Unit 11,413 smears were taken from persons of all ages who were suspected of suffering from malaria. Some of these cases were reported by hospitals, dispensaries or private doctors, and others were taken from persons living in the areas which previously showed a high incidence of malaria. Of these 11,413 slides, 31 were found positive.

Thus a total of 37 positive cases of malaria were found in the year from 28,750 blood smears.

The 27 cases were distributed as under :—

Black River District	27
Rivière du Rempart	5
Flacq	2
Grand Port	1
Port Louis	1
Savane	1

By age group and type of malaria the 37 cases were distributed as under :

Age in years	*S.T.*	*Q.T.*	*B.T.*	*Mixed infection*	*Unidentified*	*Total*
0–5 ...	4	5	4	2	2	17
6–25 ...	6	—	—	2	2	10
Over 25 ...	4	5	—	1	—	10
TOTAL ...	14	10	4	5	4	37

SURVEY WORK

PART II—MALARIA ENTERING MAURITIUS

Blood smears were taken from soldiers of the King's African Rifles, the Royal Pioneer Corps and other units as they came to Mauritius from East Africa or the Middle East. A total of 1,841 slides were examined and 10 positive cases found (9 S.T. and 1 Q.T.)

A tourist coming from Mombassa fell sick with malaria in Mauritius and a blood smear taken showed B.T. malaria.

Conclusion.—The low level of malaria in Mauritius has been maintained but, from the ages of some of the positive cases, it would appear that malaria transmission still exists.

If the area on the South Coast that is left unsprayed this year produces no malaria, it may be possible in the future to reduce still further the area where residual house spraying is carried out, and thus more time and money could be spent on the control of other diseases that are carried by insects.

A. ENTOMOLOGY RESEARCH SECTION

The Entomologist's report which deals with malaria control research is at Appendix III.

28. *Filariasis.*—45 cases were treated in hospitals and 81 in dispensaries.

29. *Enteric Fever.*—The cases of this disease notified in the year 1953 numbered 108 equivalent to an incidence rate of 0·21 per 1,000 of the population as compared with 252 cases notified in 1952, equivalent to an incidence rate of 0·50 per 1,000 of the population.

The number of deaths amongst these 108 cases was 11 giving a case motality of 10·18 per cent as compared with 19 and 7·54 per cent the previous year.

The incidence of this disease per 1,000 of the population and the case mortality for the past five years were :—

Year		*No. of cases notified*	*Rate per 1,000 of the population*	*Case mortality per cent*
1948	...	371	0·839	23·18
1949	...	316	0·711	16·77
1950	...	319	0·686	15·98
1951	...	326	0·67	15·95
1952	...	252	0·502	7·54

Large stocks of chloramphenicol are held by the Department. Results obtained with that drug are good when cases come up for treatment early enough. Unfortunately, many cases first report to a medical officer a long time after the onset of the disease and in such cases response to the drug is poor.

30. *Diphtheria.*—The cases of this disease notified in the year numbered 62, equivalent to an incidence rate of 0·12 per 1,000 of the population.

The number of deaths among the 62 cases was 4 giving a case mortality of 6·45 per cent.

The following figures indicate the number of cases of diphtheria notified, the incidence rate and the case mortality for the past five years:—

Year		*No of cases notified*	*Incidence rate per 1,000 population*	*Case mortality per 100*
1948	...	163	0·369	17·79
1949	...	154	0·346	14·28
1950	...	96	0·206	9·37
1951	...	88	0·18	19·31
1952	...	73	0·145	13·70

31. *Erysipelas.*—There were 4 cases notified during the year with one death.

32. *Small Pox.*—No case has occurred in Mauritius since 1913 and vaccination is compulsory.

Vaccinations performed were 13,394 :—

Successful vaccinations on first attendance	12,488
Successful vaccinations on second and subsequent attendances ...	605
	13,093
Unsuccessful vaccinations	280
Not observed	21
	13,394

56·05 per cent of the children born were vaccinated by medical officers of the Department and the above figures do not include infants vaccinated by the private practitioners.

33. *Tuberculosis.*—During 1953, 369 cases of tuberculosis were notified as compared with 350 for 1952, 481 for 1951 and 802 for 1950.

During the year 146 deaths were attributed to tuberculosis : 142 of the respiratory system, 3 of the meninges and central nervous system and 1 of the vertebral column. In 1952, there were 201 deaths : 196 of the respiratory system, 2 of the meninges and central nervous system, 1 of the intestines and peritoneum, 1 of the vertebral column and 1 of other form.

The following indicates the deaths per 100,000 of the population from tuberculosis of the respiratory system for the 10-year period 1944–53 :—

Year	*Deaths per 100,000 of the population*
1944	51·49
1945	55·24
1946	45·49
1947	38·39
1948	60·20
1949	65·24
1950	50·78
1951	49·00
1952	40·08
1953	28·26

34. The Medical Officer who had been selected for training in the subject of tuberculosis obtained the special diploma at Cardiff in 1952 after which he undertook a study tour in England, Scotland and the Scandinavian countries. He returned to the Colony in April 1953 and took charge of the Tuberculosis Campaign.

The following is a summary of the work performed by the organization during 1953 :—

B. C. G. VACCINATION

Schools.—In 1953, the work of testing and vaccination was carried out on the same lines as the year before. All the Government and Aided Schools in Plaines Wilhems and Savanne were covered as well as the schools in Flacq and Rivière du Rempart. The schools in all these four districts had been done by the beginning of August, and the schools in the remaining districts of Pamplemousses and Port Louis were begun in September.

From February 1953 a new B.C.G. (Lyophilised passed on bile) was introduced with the hope of reducing bad ulcerations. The conversion rate of this new vaccine used in February, March, April and May was only 59·6 per cent and it is proposed to make certain changes in 1954 regarding vaccine and technique to obtain a higher conversion rate.

Visits by Nursing Staff.—All schools were visited by the Nursing Staff after vaccination and the visits were continued until all reactions were healed.

In all 1,491 visits were made and 9,488 dressings were applied.

Contacts.—Contacts of tuberculous cases were tested every month at Civil and Floreal Hospitals and vaccination carried out where necessary. These regular sessions are always well attended and it is intended to continue these contact testings as they are serving a very useful purpose.

New-born babies.—Vaccination of new born babies was carried out only if the children were brought at the Contact session. Vaccination in co-operation with the Mobile Ante-natal Clinic could not be carried out through lack of time.

Ulcers.—The ulcers produced and their course were within the normal limits for the vaccine used, and there were only a very few ulcers that took slightly a longer time to heal.

Re-tests.—Re-tests were carried out at 12 weeks or more after vaccination and this work has gone side by side with vaccination.

The figures below show the work done in 1953 :—

	Routine				
	Children to school leavers	*Adults*	*Contacts*	*New born to 1 year*	*Total*
Tests	9,673	657	863	74	11,267
Re-tests	6,865	505	1	—	7,371
Vaccinations	6,690	38	325	167	7,220

The following table gives an analysis of the Tuberculin Sensitivity amongst the persons tested.

Analysis of 10,275 tests (1st January, 1953 to 31st December, 1953) according to age-groups :—

Age	*Total*	*Positive*	*Negative*	*% of Positive*
0– 1 ...	74	18	56	24·3
2– 4 ...	293	114	179	38·9
5– 9 ...	6,349	1,630	4,719	25·7
10–14 ...	2,756	942	1,814	34·2
15–19 ...	201	104	97	51·7
20–24 ...	156	112	44	71·8
25–29 ...	130	104	26	80·0
30–34 ...	91	77	14	84·6
35–39 ...	81	72	9	88·9
40+ ...	144	135	9	93·7
TOTAL ...	10,275	3,308	6,967	

35. *Leprosy.*—4 new cases, all from Rodrigues, reported for admission to the Leper Hospital. No new case was detected in Mauritius.

36. *Venereal Diseases.*—153 cases of admission for syphilis and 4 deaths were recorded from the hospitals during the year. 14 cases of gonococcal infection were treated. At the dispensaries 475 cases of syphilis and 67 cases of gonoccocal infection were treated during the year under review.

37. *Ankylostomiasis.*—431 cases were treated in hospitals and 5,873 cases in the dispensaries. These figures are in no way reliable because a large number of cases of anæmia seen in both dispensaries and hospitals are registered as hookworm disease, due to the fact that nutritional anæmia is constantly confused with hookworm anæmia and dealt with by deworming. Considerable hæmatological evidence has been built up in the recent past to show that hyperchromic anæmia is the type predominently present in Mauritius ; nutritional anæmia is hyperchromic and hookworm anæmia hypochromic in type.

38. *Schistosomiasis.*—During the year, 73 cases were treated in hospitals and 498 at the dispensaries.

39. Figure VI shows the proportion in percentages of diseases treated in hospital to total cases treated, according to the sections of the International Classification of Diseases 1948, while Figure VII shows the proportion in percentages of certain infective and parasitic diseases treated. Table IX indicates the number of cases of notifiable diseases by districts for the year 1953 and Table X the monthly notifications.

TABLE IX

CALENDAR YEAR 1953

Notifiable contagious or communicable diseases by districts :—

District	*Typhoid fever*	*Diphtheria*	*Acute polio-myelitis*	*Erysipelas*	*Puerperal fever*	*Tuberculosis*
Port Louis	10	21	3	—	—	136
Pamplemousses	17	5	1	—	—	24
Rivière du Rempart	12	1	3	—	—	27
Flacq	11	1	5	—	—	24
Grand Port	12	2	1	1	—	35
Savane	7	1	2	—	—	14
Plaines Wilhems	22	24	10	2	—	91
Black River	7	—	—	—	—	4
Moka	10	7	3	1	2	14
TOTAL	108	62	28	4	2	369

TABLE X

Monthly notifications of notifiable contagious or communicable diseases :—

Months	*Typhoid fever*	*Diphtheria*	*Acute polie-myelitis*	*Erysipelas*	*Puerperal fever*	*Tuberculosis*
January	20	9	1	1	—	28
February	13	2	4	—	—	28
March	13	12	1	1	—	23
April	6	13	1	1	—	26
May	10	6	—	—	—	48
June	8	5	1	—	1	18
July	6	—	—	—	—	28
August	8	1	6	—	—	33
September	3	6	4	—	—	36
October	11	5	4	1	1	38
November	4	1	6	—	—	31
December	6	2	—	—	—	32
TOTAL	108	62	28	4	2	369

(2) NUTRITION AND NUTRITIONAL DISEASES

40. The following nutritional diseases were recorded during the year :—

Diseases	*In Hospital (cases)*	*At static dispensaries (cases)*	*At Mobile dispensaries (attendances)*
Beriberi	1	—	—
Pellagra	82	139	7
Scurvy	2	—	17
Other deficiency states	230	2,830	2,980

(3) FOOD IN RELATION TO HEALTH AND DISEASE

Food supplies.—The quality and quantity of food available to the island's population remains one of the essential preoccupations of the health services. On the whole, the foodstuffs offered to the public are of good quality, but the food situation is not yet very satisfactory. The cost of essential basic foodstuffs is still very high. Animal protein is not easy to obtain and still less at a reasonable price : butcher's meat is under control and not freely available ; fish, in greater demand than in prewar days, is not procurable in plenty ; eggs are scarce and tend to become scarcer at certain times of the year when epizootic diseases cause havoc among poultry; there is not enough milk produced. On the other hand, green vegetables are not as plentiful as before and cost a lot. As the result of the higher prices paid for sugar, land formerly used to produce foodcrops, the market price of which was accessible to the man in the street, is now supporting sugar cane.

The food inspectorate was very active and contined to pay particular attention to the sale of fresh milk, the adulteration of which in the absence of sufficient production, is extremely common. In 1953, there were 733 successful prosecutions of milk sellers; fines imposed amounted to Rs. 75,120 and imprisonment reached the total of 55 months and 17 weeks, as indicated in Table XI. (Corresponding value of fines in sterling : £5,635.8s).

TABLE XI

PROSECUTION OF MILK SELLERS

District or Section	*No. of successful prosecutions*	*Sentence*		*Fines*
		Months	*Weeks*	Rs.
Port Louis District	241	12	—	39,587
Pamplemousses District ...	146	16	3	11,169
Rivière du Rempart District ...	20	—	—	1,400
Flacq District	59	—	—	4,285
Grand Port District	23	—	—	1,317
Savanne District	25	—	—	3,100
Curepipe Section	50	—	—	2,865
Vacoas Section	63	3	2	6,483
Rose Hill Section	59	23	—	2,665
Black River District	6	—	—	175
Moka District	41	1	12	2,074
TOTALS ...	733	55	17	75,120

Slaughter Houses and Markets.—There are six public and one private abattoirs. The public abattoirs administered by the Municipality of Port Louis the Town Councils of Curepipe and Beau Bassin—Rose Hill as well as the new departmental slaughter house at Flacq are each controlled by a qualified Veterinary Officer. In other places supervision rests with the Sanitary Staff.

There are 12 markets in the Colony.

(4) GENERAL MEASURES OF SANITATION

41. *Health Inspection.*—On 31st December 1953, the staff of Sanitary Inspectors consisted of :—

4 Senior Health Inspectors
5 Sanitary Inspectors Grade I
45 Sanitary Inspectors Grade II
and 1 Port Health Inspector

In the course of the year under review, one Senior Health Inspector was detailed for duty in Rodrigues, a dependency of Mauritius.

For sanitary inspection, the Port Louis Municipal area is divided into six sections, Plaines Wilhems district into three sections and the remaining districts into seven divisions, which comprise a total of ten sections.

The inspections recorded as made by the Sanitary Inspectors during the year are listed in Table XII whilst Table XIII gives particulars of prosecutions entered at the instance of the Health Department.

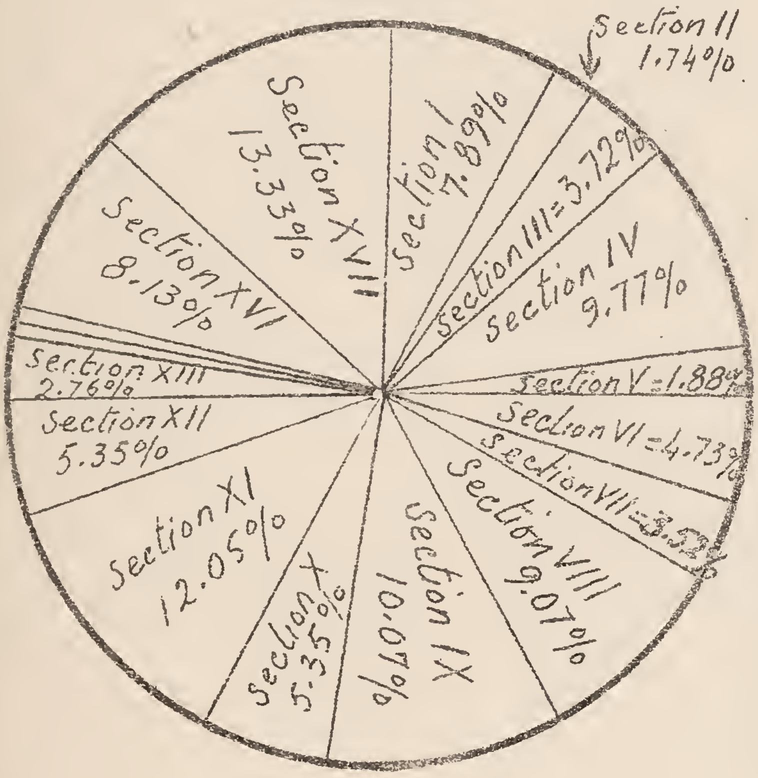
FIGURE VI.

YEAR 1953

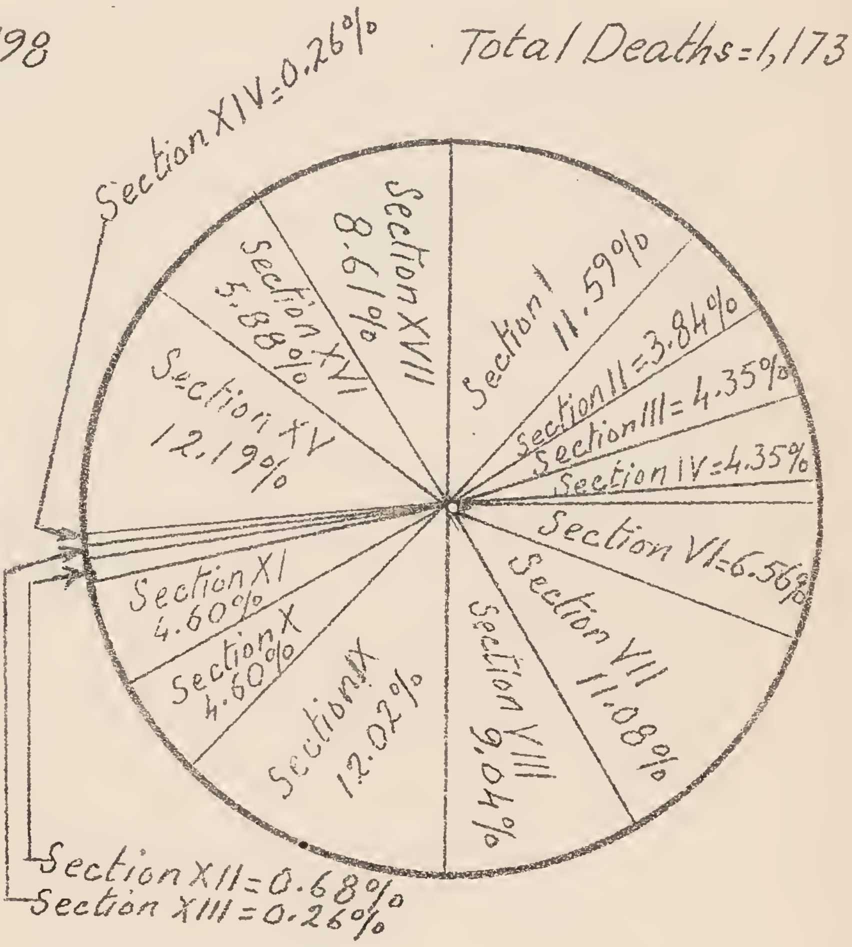
Proportion in percentages of diseases in hospital, by Sections of the INTERNATIONAL STATISTICAL CLASSIFICATION of Diseases, 1948, to total cases treated in hospital.

Proportion in percentages of Deaths in hospital, by Section of the INTERNATIONAL STATISTICAL CLASSIFICATION to total deaths in hospital.

Total Incidence=30,198



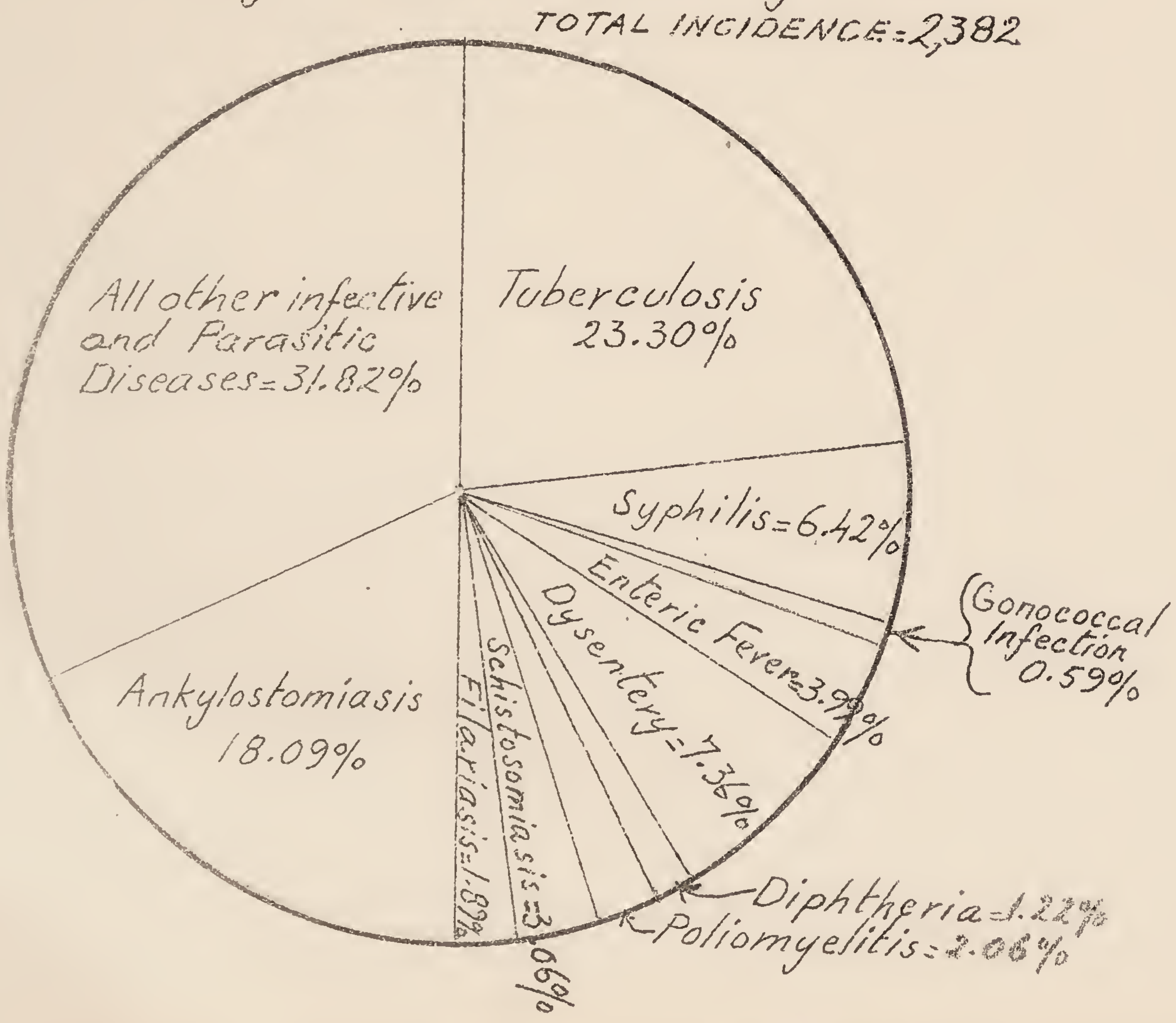
Total Deaths=1,173



REFERENCE

Section I.	Infective and Parasitic Diseases.
Section II.	Neoplasms.
Section III	Allergic, Endocrine system, Metabolic and Nutritional Diseases.
Section IV.	Diseases of the blood and blood forming organs.
Section V.	Mental, Psychoneurotic and personality disorders.
Section VI.	Diseases of the nervous system and sense organs.
Section VII.	Diseases of the circulatory system.
Section VIII.	Diseases of the respiratory system.
Section IX.	Diseases of the digestive system.
Section X.	Diseases of the Genito-urinary system.
Section XI.	Deliveries and complications of Pregnancy, childbirth and Puerperium.
Section XII.	Diseases of the skin and cellular tissue.
Section XIII.	Diseases of the bones and organs of movement.
Section XIV.	Congenital Malformations.
Section XV.	Certain diseases of early infancy.
Section XVI.	Symtoms, Senility and ill-defined conditions
Section XVII.	Accidents, Poisonings and Violence

Proportion in percentages of certain infective and parasitic diseases treated in hospital to total cases of infective and parasitic diseases treated. (Section I of INTERNATIONAL STATISTICAL CLASSIFICATION of diseases, injuries and causes of death.



Proportion in percentages of deaths in hospital due to certain infective and parasitic diseases to total deaths in hospital, due to infective and parasitic diseases.

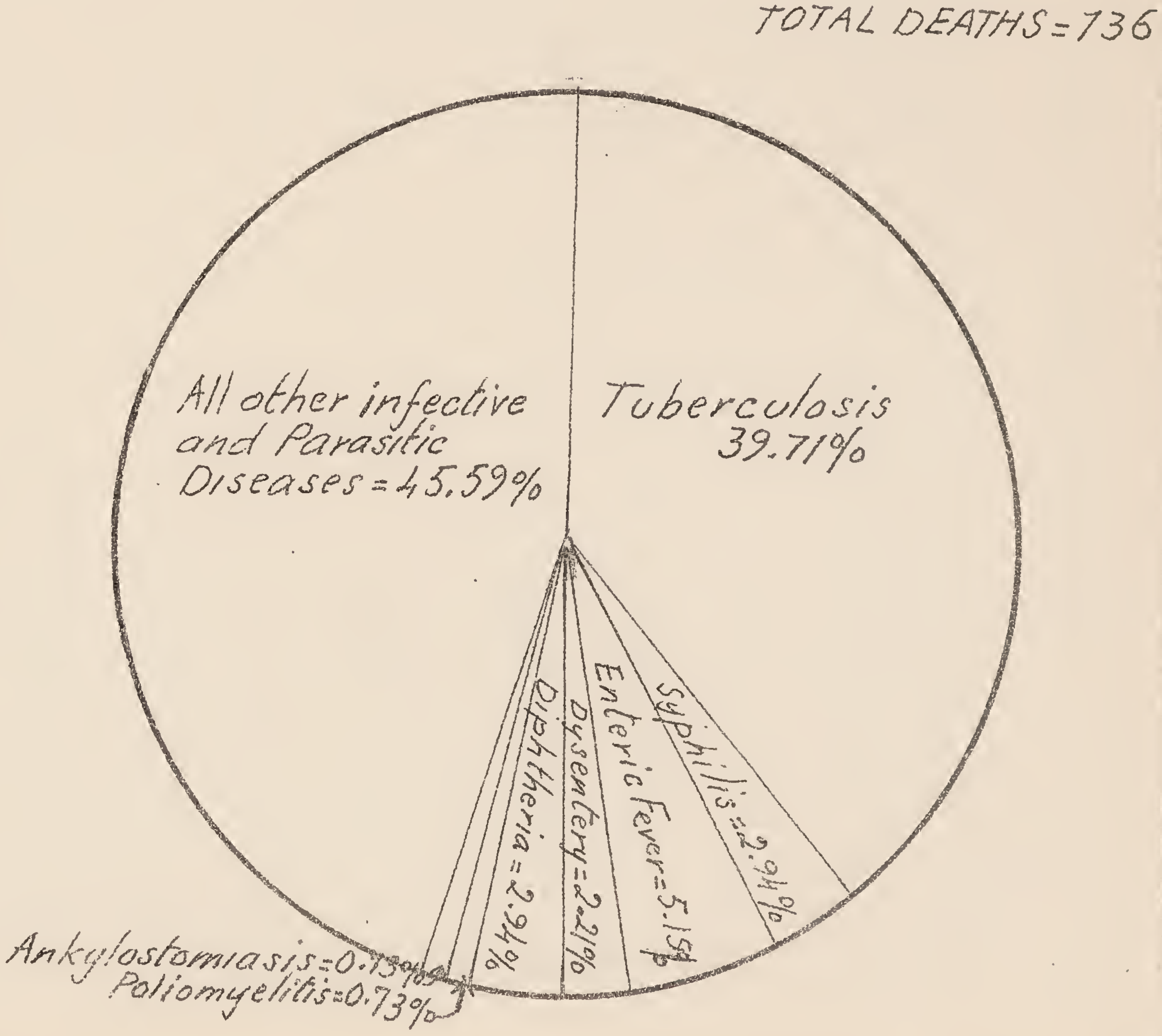


TABLE XII

SANITARY INSPECTORS YEARLY REPORT 1953

	Examination of foodstuffs	*Samples of foodstuffs submitted for analysis*	*Seizures*	*Inspection of food premises*	*Visits to Slaughter houses*	*Visits to markets*	*Inspection of schools*	*Inspection of offensive trades*	*Inspection of other premises*	*Inspection on account of new buildings*	*Inspection in connection with mosquito control*	*Inspection in connection with notifiable diseases*	*Inspection in connection with night soil service*	*Inspection in connection with scavenging service*	*Disinfections carried out*	*No. of notices orders and requests served*	*Cremations attended to*
Port Louis District...	1,291	178	55	2,456	26	64	137	1	6,296	431	6,296	52	1,211	856	28	761	45
Pamplemousses District	864	86	5	324	—	—	59	134	5,956	822	6,473	66	339	540	17	518	109
Rivière du Rempart District	45	—	—	177	—	—	15	11	—	244	4,534	26	90	487	13	279	66
Flacq District ...	183	56	7	393	97	365	88	14	4,141	380	8,014	14	727	595	8	1244	73
Grand Port District	1,838	26	1	623	232	297	298	—	6,618	138	39	15	267	540	14	650	69
Savane District ...	378	—	6	223	123	—	130	13	—	268	7,002	22	163	365	9	572	45
Curepipe Section ...	465	—	13	1,338	6	213	73	—	7,729	299	2,716	15	5,288	365	11	927	25
Vacoas Section ...	220	1	31	318	—	365	28	—	6,238	356	6,837	12	159	365	9	688	33
Rose Hill Section ...	2,002	34	38	982	13	91	84	3	5,644	570	3,987	85	247	365	30	753	71
Moka District ...	977	—	2	471	—	365	49	4	2,788	122	3,251	24	535	365	21	423	50
Black River District	250	—	—	272	—	—	84	66	6,644	169	115	9	353	682	5	425	4
TOTAL ...	8,513	381	158	7,577	497	1,760	1,045	246	52,054	3,799	49,462	340	9,379	5529	165	7240	590

TABLE XIII

PROSECUTIONS ENTERED AT THE INSTANCE OF THE HEALTH DEPARTMENT—WHOLE COLONY

Nature of Offence	*Total*	*No. of cases*			*Sentence*	
		Successful prosecutions	*Discharged*	*Summons withdrawn*	*Total Fines*	*Total imprisonment*
Selling sophisticated milk ...	501	486	2	13	71,875	55 mths 17 wks
Failing to have the names, surnames and the kind of milk painted on milk vessels (N.G. 80/1944) ...	116	113	1	2	1,764	—
Failing to produce on demand Registration Certificates whilst selling milk (G.N. 42/1934) ...	77	74	1	2	664	—
Non compliance within delay of Notices re: nuisances as defined in Art. 18 of the Public Health Ordinance 1925	217	172	1	44	2,032	—
Preparing foodstuffs without taking adequate measures to prevent infection or contamination (P.H.O. 47/1925)	1	1	—	—	25	—
Exposing for sale ready eatable foodstuffs unprotected from dust and flies (G.N. 320 of 1920) ...	210	207	3	—	2,264	—
Failing to provide latrines on premises or to maintain the latrines in good condition (G.N. 183/1926)	102	100	—	2	580	—
Failing to produce on demand Medical Certificates—whilst selling food commodities (G.N. 153 of 1926 and 164 of 1927)	50	48	1	1	298	—
Burning charcoal without permission (G.N. 198/1907)	23	23	—	—	518	—
Non compliance within delay of order re: mosquito nuisances as defined in Ordinance 28 of 1946 ...	—	—	—	—	—	—
Other offences	71	67	2	2	1,403	—
TOTALS ...	1,368	1,291	11	66	81,423	55 mths 17 wks

42. *Conservancy.*—The service remained satisfactory in urban areas but some difficulties were experienced in rural areas, owing to the lack of experience of Village Councils. In some cases contractors had to be called in.

43. *Housing.*—The housing position is still critical. High building cost is largely responsible for this state of affairs.

Local Authorities have a building programme which is proceeding more or less satisfactorily but which still lags behind actual requirements in the urban area.

There has been an improvement in the standard of construction of dwelling houses in the rural areas put up by the residents either for their own occupation or for renting.

44. *Port Louis District.*—Table XIV summarises the work done of Port Louis. Table XV gives particulars of cases heard by the Magistrate in Port Louis at the instance of the Medical and Health Department.

The following table shows the number of rats caught during the ten-year period 1944–53.

TABLE XIV

SUMMARY OF SANITARY WORK IN PORT LOUIS DISTRICT DURING THE YEAR 1953

	Inspection of Premises	*Notices (Ordinance 47 of 1925)*		
	No. of visits	*No served*	*No. complied with*	*No. not complied with*
Visits to Bakeries and Pastry cooks...	246	3	3	—
Cemeteries and Cremation Grounds...	75	—	—	—
Dairies	—	—	—	—
Factories : —				
Wine	181	—	—	—
Aerated waters	167	—	—	—
Others	117	—	—	—
Hotels and Restaurants	599	5	5	—
Markets	64	—	—	—
Private Premises	6,296	761	719	42
Shops and Stores	1,146	—	—	—
Slaughter Houses	26	—	—	—
Stables and Cowsheds	62	4	4	—
TOTAL	8,979	773	731	42

45. *Plaines Wilhems District.*—A summary of the sanitary work done in Plaines Wilhems during the year 1953 is given at Table XVI.

(5) RODENT CONTROL

46. The work to reduce the rat population continued in a routine manner during the year. Trapping and poisoning with zinc phosphide and Warfarin are the methods employed in the campaign.

A claytonizer is available for the fumigation of imported cargo likely to harbour rats.

The Government Granary is regularly fumigated with sulphur dioxide.

The branch functions under the Medical Officer of Health for Port Louis and the Port Health Inspector and 1 Technical Assistant, 1 Dissector of rats and 7 rodent operators.

The work is mostly concentrated on the destruction of rats in infested premises and in the harbour area of Port Louis and operations have been extended to Plaisance Airport. The methods used consist of a mixture of trapping and poisoning, stress being laid on poisoning which foils the shy and cunning rats, but our technique for dealing with rodents is contantly kept under review and modernized in the light of fresh developments. The use of anti-coagulant rodenticide such as Warfarin has proved very successful.

TABLE XV

PARTICULARS OF CASES PROSECUTED AT THE INSTANCE OF THE HEALTH DEPARTMENT—PORT LOUIS DISTRICT

	Number of cases					*Sentence*		*Remarks*
	Total	*Fined*	*Dis-charged*	*Post-poned*	*Struck out*	*Total fines* Rs	*Imprisonment*	
Sale of sophisticated milk	178	164	1	5	8	38,380	(1) 6 months hard labour. (2) 2 months (3, 4 months hard labour.	7 cases struck out on request of Magistrate. 1 case stuck out accused left colony.
Failing to comply with Notices (Ord : 47 of 1925)	42	39	1	—	2	724	—	2 cases struck out on request of D.M.S.
Failing to produce medical certificate (G.N. 152 of 1926	22	21	1	—	—	93	—	—
Failing to produce registration certificate as milk seller (G.N. 80 of 1944)	7	7	—	—	—	95	—	—
Failing to have milk cans properly marked (G.N. 80 of 1944)	10	10	—	—	—	295	—	—
Exposing cakes to dust and flies (G.N. 320 of 1920	103	100	3	—	—	1,107	—	—
Preparing ice sweets without taking adequate measures to prevent contamination	1	1	—	—	—	25	—	—
TOTAL ...	363	342	6	5	10	40,719	—	—

TABLE XVI

SUMMARY OF SANITARY WORK IN PLAINES WILHEMS DURING THE YEAR 1953

Inspection of Premises

Description of premises inspected	*No. of visits*	*Notices (under Ordinrnce 49 of 1954)*			*Orders (under Ordinance 28 of 1946)*			*Requests*		
		No. served	*No. complied with*	*No. not complied with*	*No. served*	*No. complied with*	*No. not complied with*	*No. served*	*No. complied with*	*No. not complied with*
1. Bakeries and 'pastries'	470	61	51	10	—	—	—	—	—	—
2. Cemeteries and cremation grounds ...	161	—	—	—	—	—	—	—	—	—
3. Dairies	107	11	11	—	—	—	—	—	—	—
4. Factories :—										
(*a*) Aerated water	31	1	—	1	—	—	—	—	—	—
(*b*) Others	71	16	14	2	—	—	—	—	—	—
5. Hotels and Restaurants	856	47	47	—	—	—	—	—	—	—
6. Markets	604	—	—	—	—	—	—	—	—	—
7. Private Premises	19,599	1,559	1,428	131	1	1	—	1	1	—
8. Shops and Stores	1,204	120	111	9	—	—	—	—	—	—
9, Schools	185	—	—	—	—	—	—	—	—	—
10. Slaughter Houses	19	—	—	—	—	—	—	—	—	—
11. Stables & Cowsheds	1,105	66	62	4	—	—	—	—	—	—
TOTALS ...	24,412	1,881	1,724	157	1	1	—	1	1	—

TABLE XVII

RATS CAUGHT DURING 10–YEAR PERIOD 1944–53

Year	*Norvegicus*	*Rattus*	*Frugivorus*	*Alexandrinus*
1944	747	17	50	6,870
1945	849	14	145	7,687
1946	1,897	71	187	10,730
1947	2,760	54	65	10,829
1948	2,028	62	148	14,671
1949	1,875	62	365	17,286
1950	1,512	42	324	12,954
1951	1,142	24	282	5,796
1952	1.076	11	78	5,220
1953	1,356	23	44	5,025

(6) PORT HEALTH WORK AND QUARANTINE

47. The ports on the Mauritius seaboard are Port Louis and Mahebourg, but all ocean-going vessels call at Port Louis which has a marked seasonal trade connected with the sugar crop. The Medical Officer of Health, Port Louis, assisted by the Port Health Inspector, is responsible for health measures in the port area.

No passenger arrived from abroad was detained on account of one of the quarantinable diseases.

Table XVIII summarises the work done by the Port Health Authority :—

TABLE XVIII

Passengers landing	5,271
Passengers in transit	6,887
Passengers under surveillance	48
Vessels arriving	328
Crews examined	23,524
Vessels given pratique on arrival	283
Vessels given pratique after disinfection of the linen and effects of the passengers and crew	153
Vessels given pratique after fumigation of cargo	109
Vessels arriving from infected ports	45

The coming into force of the new International Sanitary Regulations, whereby the possession of a valid certificate of inoculation or vaccination against smallpox, cholera and yellow fever is considered as evidence of sufficient protection, has brought a marked reduction in the number of passengers placed under surveillance.

The airport in the south of the island at Plaisance, which now complies with the requirements of Article 19 of the International Sanitary Regulations, has been designated as a Sanitary Air Port. It continued to be under the responsibility of the District Medical Officer assisted by a Sanitary Inspector. 159 civil aircraft arrived in the Colony with 3,908 passengers. Of these, 863 coming from infected areas were put under surveillance. All in-coming and out-going aircrafts are regularly disinsected.

The Quarantine Station is at Cannonier's Point in the district of Pamplemousses. It is under the care of a steward who lives on the spot.

(7) SCHOOL MEDICAL SERVICE

48. (*a*) The periodical inspection of primary school children, with special emphasis on the following points, has been the main feature of school medical work :—

(i) The care of as many entrants as possible.

(ii) The care of all pupils referred by the school nurse, teacher or parent.

(iii) The follow-up of cases.

(*b*) *Medical inspection.*—116 schools were visited and 10,271 pupils examined. The details are thus :

Entrants	6,780
Specials	1,985
Re-examinations	1,506
	10,271

(*c*) Nearly half of the total number of entrants were examined with the following results :—

(i) 96·6 per cent needed dental treatment.

(ii) 13 per cent had a poor general condition.

(iii) 56·8 per cent had no vaccination marks against smallpox.

(*d*) A survey conducted by the school nurses among 46,225 pupils revealed the following defects, abnormalities or diseases among the 1,812 cases referred for examination to the Medical Officer :—

	No.	*Incidence per 1,000 pupils*
Speech	15	0·3
Scabies	522	11·3
Eye affections	219	4·7
Epilepsy	4	0·09
Ear, Nose and Throat	418	9·
Anæmia	511	11·
Heart and circulation	6	0·13
Other	9	0·19

Treatment by the school nurses was carried out under the supervision of the School Medical Officer. Those requiring specialist treatment were referred to the Government Specialist or to the Government Dental Surgeons. 1,407 pupils were given an extra ration of milk and additional yeast on school days.

(*e*) *Secondary Schools.*—343 pupils attending the three Government Secondary schools were examined, 218 being entrants.

It was found that 6·6 per cent required medical treatment and 87 per cent dental treatment.

(*f*) 49 schools were supplied with the new first aid boxes and replenishment of equipment arranged for all schools.

(*g*) The school nurses conducted a cleanliness survey among 40,224 pupils with the following results :—

(i) 42·6 per cent of the pupils had dirty finger nails
(ii) 21·9 ,, nits
(iii) 5·1 ,, nits and lice.

(*h*) Milk distribution to primary school children continued to be effected smoothly during the year.

Early during the year skimmed milk replaced full cream milk as deficiency in Vitamin A and D is not a problem. As a result of an experiment carried out at the School Holiday Camp and in two schools, it was decided to add cocoa to milk as this proved more acceptable to children than skimmed milk alone.

The issue of 20 grammes of full cream milk was replaced by 23 grammes of skimmed milk with ½ gramme cocoa added.

(*i*) As from July, 1953 a Nutrition and Health Assistant has been helping the Medical Officer by conducting nutrition surveys in schools and giving simple talks on nutrition to senior pupils.

(*j*) Health Education. The school Medical Officer reports as follows :—

(i) *In schools.*—Health Education of parents, children and teachers was possible through the medical inspections, the dentists' visits and the visits of the school nurses and the Nutrition and Health Assistant.

The School Health Service has continued its membership of the Associate Membership scheme of the Central Council of Health Education in U.K. and during the year valuable material for health education purposes was received. From July, a copy of "Better Health," a monthly publication destined for lay people, is sent to each primary school and it is hoped that this will provide continuous health imformation for teachers for use in their health education work. Also a copy of a hand-book of "Suggestions on Health Education"—a U.K. Ministry of Education publication—has been sent to each school.

At present there is no standard syllabus for health teaching in the primary schools. Each school improvises its own syllabus and the time devoted for health teaching varies from school to school. The Schools Medical Officer hopes to prepare next year, in co-operation with the superintendents and the representatives of the teachers, a suitable syllabus to be used as a standard one for all schools, with particular emphasis on the kind and amount of health knowledge to be imparted to the pupils in the different standards.

(ii) *At Teachers' Training College.*—The Schools Medical Officer is taking over next year the teaching of Hygiene to the entrants of the Teachers' Training College. It is hoped that this will initiate a better co-ordination of the health education work in the schools, as the teachers in training will be taught the health knowledge they must impart to the pupils under their care when they leave the College. They will also be taught how to co-ordinate and supplement the work of the School Health Service staff, this co-ordination of the preventive and therapeutic aspects of school health work being vital for success.

(iii) *In school and community.*—Some film strips on various health topics ordered last year have arrived, and as soon as a projector becomes available, the nurses and the Nutrition and Health Assistant will use them in their health education work in schools. Also the Nutrition and Health Assistant is starting demonstrations on nutrition—in addition to her talks—for senior pupils, and the mothers of these pupils will also be invited to be present. It is proposed, in this connection, to work with the Maternity and Child Welfare Society and the Social Welfare Centres.

During the year the School Health Service Staff co-operated with the Social Welfare Department in the Health and Welfare Campaigns initiated by that Department. The staff gave talks and demonstrations to the public at Long Mountain and Bambous Social Welfare Centres and the teachers and children from the neighbouring schools visited the health exhibitions held in the centres. The teachers and children also took part in the "cleaner village" campaign which was a feature of these activities based on Social Welfare Centres.

PART VI

Maternity and Child Welfare Society

49. The activities of this Society in 1953 were as listed below :—

Confinements	2,559
Attendances of women at consultations (exclusive of attendances at ante-natal clinics held by superintendents)	3,870
Attendances of infants at consultations	7,278
Attendances of infants at Centres for weighing and supervision	17,616
Visits to infants	2,151
Average number of infants receiving milk daily	1,045
Average number of litres of milk distributed daily	540

50. Ante natal clinics—The Superintendent of Midwives, to whom is entrusted the supervision of persons practising midwifery, held regular ante-natal clinics at Curepipe, Vacoas, Henrietta, Camp Fouquereaux, Quatre Bornes, Rose Hill, Beau Bassin, Rose Belle, Bénarès, Rivière des Anguilles, Flacq and Long Mountain.

The Visiting Matron also held ante-natal clinics at Medine (Camp de Masque), Mahébourg and Bel Air, and the total number of expectant mothers in attendance was 722.

51. The District Midwifery service based on Civil Hospital has continued to function satisfactorily during the period under review and has served the very useful purpose of relieving pressure on hospital beds in the Maternity Ward. The number of confinements conducted by the visiting midwives was 769, whilst at the same time 1,067 confinements were conducted in the maternity of Civil Hospital. The combined figures represent 40 per cent of the total number of births for the district, a very satisfactory figure when it is realised that the district midwifery service is confined to an area within one mile radius from the hospital.

Ante-natal visits numbered 823 and post-natal visits 7,784. In addition, the attendance at the ante-natal clinic has continued to increase, 2,036 expectant mothers receiving attention and the attendances amounting to 6,157 or an average of 125 per week as compared with 87 in 1953 and 70 in 1951.

The Mobile Ante-natal Clinic, which visits at regular intervals 76 outlying villages and hamlets, is increasingly popular, and requests continue to be received for additional halting places to be included in its itinerary. During the year under review, 2,158 new cases were seen, with 3,727 re-attendances.

52. 48 midwives are employed by Government, 19 of whom are seconded to the Maternity and Child Welfare Society, while three are stationed in the dependency of Rodrigues. The midwives working directly under officers of the Department made 14,956 visits and attended 1,629 confinements. The figures quoted in the first paragraph of this part refer to the midwives of the Maternity and Child Welfare Society.

53. There were 23 pupil midwives in training at Victoria and Civil Hospitals during the year. 16 qualified in 1953.

PART VII

Prisons

54.—(*a*) *Population.*—The total number of prisoners admitted in this Institution during the year was 1,307 and the daily average population was 492·15 (including 113·98 at the Borstal Institution).

(*b*) *Prevalenee of sickness.*—The total number of cases of sickness registered was 5,233. Out of this number, 269 were admitted into hospital. The in-patients include 50 cases from the Borstal Institution and 10 cases from the Port Louis Prison (now closed) transferred to Beau Bassin Prison Hospital for treatment.

(*c*) *Admissions.*—Table showing monthly admissions in Hospital :—

January	46	July	24
February	26	August	29
March	20	September	13
April	17	October	16
May	20	November	22
June	18	December	81

Total stay and average stay per patient for the year compared with previous years :—

Year	*Total stay in days*	*Average stay per patient*
1949	9,024	13·08
1950	10,414	18·57
1951	8,367	19·32
1952	4,232	17·13
1953	3,469	12·89

Monthly admissions in Hospital for the common diseases :—

	January	*February*	*March*	*April*	*May*	*June*	*July*	*August*	*September*	*October*	*November*	*December*
Influenza	23	12	5	2	7	—	7	3	—	2	8	10
Anæmia	1	—	—	1	1	1	—	—	—	—	—	—
Dysentery	5	4	2	1	1	1	1	—	—	—	—	—
Diarrhœa or Enteritis ...	6	1	2	—	—	2	1	—	1	1	1	2
Avitaminosis	—	—	—	—	—	—	—	—	1	—	—	—
Asthma	1	—	—	—	—	1	—	2	—	1	1	—
Ankylostomiasis ...	1	—	—	—	—	—	1	—	—	—	—	—
Malaria	—	—	—	—	—	—	—	—	—	—	—	—

(*d*) *Venereal Diseases.*—The number of cases was 18, out of which 6 were suffering from secondary Syphilis and 3 from Tertiary Syphilis, 3 from soft chancre and the 5 others from gonorrhoæ and its complications.

(*e*) *Deficiency Diseases.*—During the months of July and August, some cases of pellagra together with other forms of avitaminosis were detected. The fact was reported to the Director of Medical Services. Consequently the cases were examined by Dr. André. After a treatment of one week with 250 mgms of nicotinic acid daily, all cases of pellagra disappeared. "Torulite" is now being mixed with the prisoners lentils.

It is worthy to note that pellagra was also noted on newly admitted prisoners.

(*f*) *Scabies.*—The number of cases during the year was 54. All these prisoners were admitted into the prison already suffering from the disease.

(*g*) *Malaria.*—No case of malaria was noted.

(*h*) *Deaths.*—There were 3 deaths amongst the prisoners : one at Civil Hospital, one at Victoria Hospital and one at Beau Bassin Prison Hospital.

In each case a judicial enquiry was held.

Number of deaths during previous years :—

Year	*Number*	
1948	5	
1949	1	
1950	1	
1951	—	
1952	—	+ 3 executions
1953	3	(including 1 at Civil and 1 at Victoria Hospitals) + 1 Execution.

(*i*) *General Remarks.*—On the whole, the health conditions were good. As usual all prisoners were inoculated with prophylactic T.A.B. vaccine on their admission to the Prison.

At the closing of Port Louis Prison during the year, the Dispensary and the Hospital Officer of that Institution were transferred to the Borstal Institution. The Borstal Institution now benefits from the services of a permanent Hospital Officer.

Rodrigues

55. The Report of the Medical Officer, Rodrigues, is appended. (Appendix II).

ACKNOWLEDGEMENT

I have to thank the members of the Staff for their loyal and devoted co-operation. I am also deeply grateful to all well-wishers and voluntary workers for their help in the course of the year.

12th October, 1954.

H. ANDRÉ,
Acting Director of Medical Services.

APPENDIX I

Annual Report of the Central Health Laboratory for the year 1953

The work of the Laboratory is divided up into the following sections :—

- I. Medical Biology
- II. Pathology
- III. Bacteriology
- IV. Hæmotology
- V. Serology
- VI. Veterinary
- VII. Laboratory Products.

I. MEDICAL BIOLOGY

A. 7,163 Simple Routine Examinations were made

(a) *Blood* (*Microscopical*)

Films for malaria :—	
Plasodium malaria	1
No parasites found	180
Films for microfilariæ :—	
Wuchereria Bancrofti	19
No microfilariæ	114
Total number examined	314

(b) *Faeces* (*Microscopical*)

Total number examined	4,314
Helminths :—	
Hymenolepsis nana	1
Tænia saginata	1
Heterodera marioni ova	7
Enterobius vermicularis ova	7
Clonorchis sinensis	8
Trichuris ova	2,042
Ascaris ova	1,431
" Hookworm ova "	2,488
Strongyloides larvae	124
Trichostrongyle ova	6
Protozoa :—	
Entamoeba histolytica	136
Entamoeba coli	373
Vegetative and precystic amoebae	88
Iodamoeba Butschlii	1
Endolimax nana	381
Giardia intestinalis	147
Chilomastix Mesnili	28
Trichomonas intestinalis	79
Blastocystis hominis	1,585
No helminths, no protozoa	507

(c) *Urine* (*Microscopical*)

Total number examined	1,672
Hyaline casts	309
Granular Casts	229
Waxy casts	19

APPENDIX I—*contd.*

(c) *Urine (Microscopical)*—contd.

Leucocytic casts	75
Cellular casts	10
Red blood cells casts	5
Schistosoma hæmatobium	111
Trichomonas vaginalis	33
Microfilariæ	1

(d) *Urine for Pregnancy Test*

Total number examined	690
Positive-male toad test	304

(e) *Cerebro-Spinal Fluid*

Total number examined	132
Leucocyte count	101
Differential leucocyte count	31

(f) *Pus, Discharges and Scrapings (Microscopical)*

Total number examined	41

II. PATHOLOGY

Morbid histological examinations were made on 227 specimens of material.

Head and Neck

Face :—	
Sebaceous cyst	1
Fibroma	1
Ear :—	
Chronic otitis	1
Eye :—	
Meibomian cyst	1
Lip :—	
Hypertrophied epithelium	1
Granuloma	1
Filbroma	1
Mouth :—	
Epithelioma	1
Tongue :—	
Papilloma	1
Chronic glossitis	1
Gum :—	
Benign cyst	1
Jaw :—	
Adamantinoma	1
Chronic inflammation	1

APPENDIX I—*contd.*

Maxillary Antrum :—	
Epithelioma	2
Frontal Sinus :—	
Papilloma	1
Salivary gland :—	
Mixed parotid tumour	1
Thyroid :—	
Adenoma	3
Colloid goitre	1
Parathyroid :—	
Adenoma	1
Larynx :—	
Spheroidal celled carcinoma	1
Thorax :—	
Lung collapsed	1
Heart normal	1
Breast :—	
Abscess	2
Fibroadenoma	3
Cystadenoma	1
Chronic mastitis	5
Carcinoma simplex	2
Adenocarcinoma	2
Encephaloid carcinoma	2
Scirrhous carcinoma	1
ABDOMEN :—	
Stomach : Adenocarcinoma	2
Bile duct : Chronic inflammation	1
Liver : Infective Hepatitis	1
Normal	1
Multilobular cirrhosis	1
Secondary carcinoma	1
Pancreas : Post-mortem necrosis	1
Appendix : Chronic appendicitis	3
Gangrenous appendix	1
S. Hæmatobial appenditis	1
Peritoneum : S. Hæmatobial infection	1
Kidney : Cloudy swelling	1
Tuberculosis	1
Acute glomerular nephritis	1
Gall bladder : Adenocarcinoma	1
Rectum : Adenocarcinoma	1
Mucoid carcinoma	1
Anal canal : Chronic inflammation	1
PELVIS :—	
Bladder : Transitional celled carcinoma	2
Simple cyst	1
Fallopian tube : Chronic salpingitis	1
Hæmatosalpinx	1
Ovary : Simple cyst	1
Papillary carcinoma	1

APPENDIX I—*contd.*

Urethra : Caruncle	1
Uterus : Normal endometrium	6
Endometrial hyperplasia	4
Chronic endometritis	3
Fibromyoma	5
Adenocarcinoma	2
Hydatidiform mole	1
Retained placental membrane	2
Vagina : Normal wall	2
Fibroma	1
Epididymis : Tuberculous epididymitis	1
Testis : Seminoma	1
Cervix : Squamous carcinoma	14
Fibroma	1
Adenocarcinoma	3
Chronic cervicitis	12
S. Hæmotabial cervicitis	2
Normal	2
Lymph gland : Chronic adenitis	5
Secondary carcinoma	3
Lymphosarcoma	1
Tuberculous adenitis	1
Bone : Normal	3
Normal marrow	1
Periostitis	2
Exostosis	1
Bone cyst	1
Tuberculosis	1
Fracture	1
Chondroma	1
Chondro osteodystrophy	1
Osteochondroma	1
Osteogenic sarcoma	1
Chronic osteomyelitis	1
Fibrosarcoma	2
Joints : Chronic synovitis	6
Tuberculous synovitis	2
Synovial sarcoma	1
Degeneration of intervertebral disc	1
UPPER LIMB :—	
Axilla : Myxoma	2
LOWER LIMB :	
Chronic Ulcer of Leg	1
Knee : Chronic inflamation	1
Cyst of meniscus	1
Nerves : Neurofibroma	3
Muscles and Tendons : Normal muscle	1
Rhabdomyosarcoma	1
Atrophy of muscle	2
Ruptured Tendo Achilles	2
Blood vessels : Endarteritis obliterans	1
Buerger's disease	2

APPENDIX I—*contd.*

Skin : Normal	1
Chronic inflammation	8
Bed sore	1
Simple wart	1
Verruca senilis	1
Keloid	2
Haemangioma	1
Xanthoma	1
Fibroma	1
Foreign body	1
Elephantiasis	1
Multiple sarcoma	1
Rodent ulcer	4
Epithelioma	4
Miscellaneous : Piece of Fat	1
Blood clot	4
Pilonidal cyst	1
Pleural fluid malignant cells	1
Product of conception	1
Animals : Brain of guinea pig	
Normal	1
Liver of guinea pig	
Acute hepatitis	1

III. BACTERIOLOGY

1. DIRECT MICROSCOPICAL EXAMINATIONS

1,641 microscopical examinations were made

(a) *Blood*

Total number examined	2

(b) *Sputum*

Total number examined	1,251
Mycobacter tuberculosis	135

(c) *Urine*

Total number examined	34
Mycobacter tuberculosis	1

(d) *Cerebro Spinal Fluid*

Total number examined	20
Mycobacter tuberculosis	1

(e) *Throat and Naval swabbings*

Total number examined	113
Corynebact. diphtheriae	8

(f) *Pus, Discharges and Scrapings, etc.*

Total number examined	221
Neisseria gonorrhoae	27
Mycobacter tuberculosis	4

APPENDIX I—*contd.*

B. CULTURES

2,877 examinations were made

(a) *Blood*

Total number cultured	40
Bact. Coli typical	2
Bact. Coli atypical	1
Bact. paracolon	2
Bact. paracolon atypical	1
Bact. faecalis alkaligenes	1
Morgan's bacillus	2
Bact. subtilis	7
Staphylococcus aureus	3
Staphylococcus albus	15
Diphtheroids	2

(b) *Faeces*

Total number cultured	70
Bact. Coli atypical	1
Pseudomonas pyacyanea	3
Bact. paracolon	3
Bact. faecalis alkaligenes	1
Morgan's bacillus	4
Shigella flexneri	2

(c) *Urine*

Total number cultured	481
Bact. Coli typical	52
Bact. Coli atypical	42
Bact. Coli anærogenes	34
Bact. paracolon	9
Bact. paracolon atypical	21
Bact. fæcalis alkaligencs	6
Morgan's bacillus	7
Pseudomonas pyocyanea	7
Bact. proteus	4
Bact. subtilis	10
Neisseria (diplococcus)	11
Staphylococcus albus	58
Staphylococcus aureus	8
Streptococcus viridans	5
Streptococcus non hæmolyticus	4
Diphtheroids	10
Monilia species	4
Inoculation to guinea pig	1

(d) *Sputum*

Total number cultured	4
Bact. proteus	1
Staphylococcus albus	1
Streptococcus	1

Appendix I—*contd.*

(e) *Cerebro Spinal Fluid*

Total number cultured	84
Bact. Coli typical	1
Bact. Coli atypical	1
Bact. fæcalis alkaligenes	1
Morgan's bacillus	3
Bact. proteus	2
Bact. subtilis	6
Pheumococcus	8
Streptococcus viridans	1
Streptococcus non haemolyticus	I
Staphylococcus albus	2
Staphylococcus citreus	2
Staphylococcus aureus	2
Monilia species	1
Mycobacter tuberculosis	1

(f) *Throat and Nasal Swabbings*

Total number cultured	999
Corynebact. diphtheriae	110
Bact. Coli atypical	1
Neisseria species	1
Streptococcus viridans	23
Streptococcus haemolyticus	14
Staphylococcus albus	25
Staphylococcus citreus	2
Staphylococcus aureus	12
Diphtheroids	29
Monilia species	54

(g) *Pus, Discharges and Scrapings, etc.*

Total number cultured	1,194
Bact. Coli typical	1
Bact. Coli atypical	6
Bact. paracolon	1
Bact. faecalis alkaligenes	3
Morgan's bacillus	1
Morax Axenfeldt becillus	9
Bact. proteus	3
Bact. subtilis	16
Neisseria species	1
Pneumococcus	4
Streptococcus viridans	7
Streptococcus haemolyticus	22
Staphylococcus aureus	27
Staphylococcus citreus	8
Staphylococcus albus	664
Diphtheroids	337
Monilia species	6
Mycobacter tuberculosis	10

(h) *Miscellaneous*

Ice Cream cultured	2
Butter cultured	3

APPENDIX I—*contd.*

C. AUTOGENOUS VACCINES WERE PREPARED FROM THE FOLLOWING ORGANISMS ISOLATED, AMONG OTHERS, FROM VARIOUS SAMPLES, 10 IN ALL

(a) *Urine*

Staphylococcus albus	1

(b) *Pus, Discharges and Scrapings etc.*

Staphylococcus albus	4
Staphylococcus citreus	1
Staphylococcus aureus	4
D. WATER ANALYSES	403
E. MILK ANALYSES	15

IV. HAEMATOLOGY

Total number examined	2,089
Full counts of Red and White Cells and Haemoglobin determinations	556
Differential leucocyte counts	295
Blood grouping (A.B.O.)	1,009
R.H. Factor (Positive)	144
R.H. Factor (Negative)	3
Clotting and bleeding times	23
Blood sedimentation rate	56
Blood platelets	2
Reticylocyte count	1

V. SEROLOGY

AGGLUTINATION TESTS :—

Total number of sera submitted for agglutination test	757
Significant agglutinins for Bact. Typhosum "H" Antigen	226
Significant agglutinins for Bact. Typhosum "O" Antigen	167
Significant agglutinins for Para Typhi A "H" Antigen	16
Significant agglutinins for Para Typhi A "O" Antigen	1
Significant agglutinins for Para Typhi B "H" Antigen	17
Significant agglutinins for Para Typhi B "O" Antigen	6
Significant agglutinins for Para Typhi C "H" Antigen	1
Significant agglutinins for Bact. Proteus O × K	4
Significant agglutinins for Bact. Proteus O × 2	2
Unsuitable for test	8

APPENDIX I—*contd.*

(*a*) *Blood*

Kahn Tests :

Negative	9,522
Doubtful reactions	513
+	397
++	528
+++	459
++++	116
Unsuitable for test	287
TOTAL ...	11,822

(*b*) *Cerebro-Spinal Fluid*

Negative	49
Doubtful reactions	2
+	1
++	4
+++	1
++++	1
Unsuitable for test	3
TOTAL ...	61

(*c*) *Blood*

Kline tests :

Negative	10,105
Doubtful reactions	127
+	384
++	422
+++	362
++++	157
TOTAL ...	11,557

(d) *Blood*

Wassermann reactions :—

Negative	654
Doubtful reactions	48
+	88
++	90
+++	226
++++	66
TOTAL ...	1,172

(e) *Cerebro Spinal Fluid*

Negative	28
Doubtful reactions	2
+	2
++	2
+++	10
++++	2
TOTAL ...	46

APPENDIX I—*contd.*

(f) *Gonorrhœa Complemeut Test*

Negative	29
Doubtful reactions	3
+	4
+ +	4
+ + +	2
+ + + +	1
TOTAL	53

(g) *Blood*

Paul Bunnell's test	7

MISCELLANEOUS

(a) *Cerebro Spinal Fluid*

Nonne Apelt test for glubulin	58

(*b*)

Ascitic fluid for cells	1
Synovial fluid for cells	1
Pleural fluid for cells	5
Pus for cells	1
Dermatitis of palm for fungus	1

VI. VETERINARY

A. 21 Microscopical examinations were made

(a) *Blood* (Microscopical)

Total number examined	4

(b) *Faeces* (Microscopical)

Total number examined	5
Tapeworm	1
Trichuris ova	1
Trichuris vulpis ova	2
Ascaris ova	1
" Hookworm " ova	2
Ankylostoma caninum	2
Spirocerca	3

(c) *Urine* (Microscopical)

Total number examined	1
Granular cast	1

(d) *Foetuses, Discharges, scrapings, etc.* (*Micr*)

Total number examined	11
Ringworm	3
Strongylus	1
Undetermined Nematode larvae	1
Dirofilaria inimitis	1
Demodex bovis	2
Clostridia	1
Corynebacteria	1
Spirocerca lupi	2

Appendix I—*contd.*

B. 9 Cultural examinations were made

(a) *Blood*

Total number cultured	1

(b) *Urine*

Total number cultured	2

(c) *Pus, Discharges, Scrapings, etc.*

Total number cultured Scrapings ...	6
B. proteus	1
Pseudomonas	1
Corynebacteria	1
Streptococcus	1
Diphtheroids	1
Streptococci viridans	4

AGGLUTINATION TESTS

Total sera submitted for agglutination test ...	295
Significant agglutinins for Brucella Abortus ...	209
Unsuitable for test	1

VII. LABORATORY PRODUCT FOR 1953

T.A.B. prophylaxis vaccine ...	6.12 litres

FLOREAL HOSPITAL

Medical Biology

(a) *Blood* (Microscopical)

Films for microfilariæ :—

No microfilariæ	1

Hæmatology

Total number examined	778
Total counts of Red and White cells and hæmoglobin determination ...	279
Differential leucocyte count	36
Blood grouping	159
Blood Sedimentation Rate	304

EXAMINATION OF BLOOD SMEARS FOR MALARIA BY THE INSECT BORNE DISEASES DIVISION

Total number examined from 10th April to 31st December, 1953	=23,980
Positive	47

APPENDIX I—*contd.*

Annual Report of the Civil Hospital Branch Laboratory

Total number examined	11,406

I. MEDICAL BIOLOGY

4,958 simple routine examinations were made

(a) *Blood* (Microscopical)

Total number examined	38
Films for malaria parasites :—	
No parasites found	14
Films for microfilariæ :—	
Wuchereria Bancrofti	5
No microfilariae	19

(b) *Faeces* (Microscopical)

Total number examined	2,512
Helminths :—	
Enterobius vermicularis ova	3
Clonorchis sinensis	1
Strongyloides larvæ	4
Trichostrongyle ova	1
Trichuris ova	966
Ascaris ova	797
"Hookworm" ova	626
Protozoa :—	
Entamoeba histolytica	39
Entamoeba Coli	58
Vegetative and precystic amoebae	14
Entamoeba fragilis	1
Endolimax nana	20
Chilomastix mesnili	7
Giardia intestinalis	63
Trichomonas intestinalis	23
Blastocystis hominis	959
No helminths, no protozoa	463

(c) *Urine* (Microscopical)

Total number examined	2,408
Hyaline casts	621
Granular casts	402
Waxy casts	23
Leucocytic casts	118
Cellular casts	34
Red Blood Cells casts	8
Schistosoma haematobium	449
Trichomonas vaginalis	85
Microfilariae	3

II. BACTERIOLOGICAL

2,193 microscopical examinations were made.

(a) *Sputum* (Microscopical)

Total number examined	1,900
Mycobacter tuberculosis	463

Appendix I—*contd.*

(b) *Urine* (Microscopical)

Total number examined	5
Mycobacter tuberculosis	2

(c) *Throat and Nasal swabbings* (Microscopical)

Total number examined	91
Corynebact. diphtheriae	2
Staphylococcus	1

(d) *Pus, Discharges and Scrapings etc.* (Microscopical)

Total number examined	197
Neisseria gonorrhaeoe	56
Spermatozoa	1

III. HAEMATOLOGY

Total number examined	1,458
Total counts of Red and White Cells and Haemoglobin determinations	845
Differential leucocyte counts	226
Blood grouping	146
Blood Sodimentation Rate	220
Coagulation and Bleeding time	21

IV. BIOCHEMICAL

(a) *Faeces*

Test for occult blood	1

(b) *Urine*

Total number examined	2,796
Qualitative tests for determination of bile ...	33
Qualitative tests for determination of acetone	81
Quantitative estimations of glucose ...	44
Quantitative estimations of albumen ...	67
Specific gravity	37
Aceto-acetic acid	1

Annual Report of the Victoria Hospital Branch Laboratory

Total number examined	9,463

I. MEDICAL BIOLOGY

4,577 simple routine examinations were made.

(a) *Blood* (Microscopical)

Total number examined	77
Films for malaria parasites :—	
No parasites found	45
Films for microfilariæ :—	
Wuchereria Bancrofti	2
No microfilariæ	35

APPENDIX I—*contd.*

(b) *Faeces* (Microscopical)

Total number examined	2,309
Helminths :—	
Enterobius vermicularis ova ...	9
Trichostrongyle ova	4
Strongyloides larvæ	2
Trichuris ova	1,354
Ascaris ova	1,004
Hookworn ova	970
Protozoa :—	
Entamœba histolytica	16
Entamœba coli	31
Vegetative & precystic amœbæ ...	7
Chilomastix mesnili	8
Endolimax nana	65
Giardia intestinalis	105
Trichomonas intestinalis	7
Blastocystis hominis	307
No helminths, no protozoa	266

(c) *Urine* (Microscopical)

Total number examined	2,191
Hyaline casts	273
Granular casts	314
Leucocytic casts	92
Cellular casts	87
Waxy casts	29
Red Blood Cells casts	16
Schistosoma haematobium	75
Trichomonas vaginalis	82
Microfilariae	1

II. BACTERIOLOGY

809 Microscopical examinations were made

(a) *Urine* (Microscopical)

Total number examined	8

(b) *Sputum* (Microscopical)

Total number examined	695
Mycobacter tuberculosis	172

(c) *Throat and Nasal Swabbings* (Microscopical)

Total number examined	28

(d) *Pus, Discharges, Scrapings etc.* (Microscopical)

Total number examined	77
Neisseria Gonorrhaeoe	7

(e) *Miscellaneous*

Pus from abcess (Microscopical)	
Total number examined	1
Entamoeba histolytica	1

III. HAEMATOLOGY

Total number examined	2,848
Total of Red and White Cells and Haemoglobin determinations ...	1,856
Differential leucocyte counts	318
Blood grouping	351
Blood Sedimentation Rate	297
Bleeding and Coagulation times ...	24
Blood platelets	2

IV. BIOCHEMICAL

(*a*) *Faeces*

Test for occult blood	3

(*b*) *Urine*

Total number examined	1,226
Quantitative estimation of glucose ...	8
Quantitative estimation of albumen ...	9
Qualitative tests for determination of Bile ...	40
Qualitative tests for determination of acetone	74
Specific gravity	7

Annual Report of the Government Chemist for the Year 1953

Staff

Mr. R. Rivalland, Assistant Government Chemist, left on 16th May, 1953 for overseas' leave returning on 18th September, 1953. In his absence, Mr. Hervel acted as Assistant Government Chemist.

Mr. K. Topsy, Junior Laboratory Assistant returned from study leave on 28th June, 1953 and took up duties in the Chemical Division.

The Government Chemist continued as a member of the Liquor Licensing Board.

Equipment

With the reorganisation of the Insect Borne Diseases Division, the chemical section was transferred to this laboratory. This necessitated the installation of additional bench space and complete rewiring of the electricity supply. Advantage was taken of this to modernise the laboratory as far as the present building and equipment allowed. Further modern equipment is urgently needed, some of which is awaiting delivery.

General Chemical Analyses

During the year 1,822 exhibits were received involving 7,704 samples compared with 1,840 samples in 1952. This increase is largely accounted for by the examination of empty aviation petrol drums, of which 5,276 were examined on 13 visits to the depot compared with only 254 drums in 1952.

Table I shows the details of the number of exhibits and total number of samples received during the year.

TABLE I

Details of Exhibits and Samples Received in 1953

Description	*Exhibits*	*Samples*
Gandia	48	106
Opium	18	112
Rum	449	776
Wash	1	1
Wine	1	1
Cyder	1	1
Brandy	1	1
Denatured Spirits...	17	86
Power alcohol	88	88
Pharmaceutical Drugs	102	102
Tissues	54	54
Bread	114	114
Edible Oil	19	19
Water	53	53
Milk	738	738
Dried Milk...	3	4
Foodstuffs	17	27
Tobacco	1	1
Insecticides	31	35
Gas Test (drums)	13	5,276
Poisoning Human	15	32
Poisoning Animal	5	14
Miscellaneous	15	43
Total ...	1,888	7,704

The distribution of the samples received, according to their sources is shown in Table 2 from which it is seen that the bulk of the work is for Government Departments, with a little being carried out for Her Majesty's Forces, and private firms and individuals.

TABLE 2

DISTRIBUTION OF SAMPLES

Section	*Medical*	*Police*	*Customs and Excise*	*Supplies*	*Other Govt. Depts.*	*H.M. Forces and Private Firms*
Gandia	—	106	—	—	—	—
Opium	—	112	—	—	—	—
Rum	15	478	283	—	—	—
Wash	—	1	—	—	—	—
Wine	—	1	—	—	—	—
Cyder	—	1	—	—	—	—
Brandy	—	—	1	—	—	—
Denatured Spirits	—	86	—	—	—	—
Power Alcohol	—	—	88	—	—	—
Drugs	—	—	102	—	—	—
Tissues	—	—	54	—	—	—
Bread	—	—	—	114	—	—
Edible Oil	1	—	—	18	—	—
Water	1	—	—	—	51	1
Milk	705	—	—	—	25	8
Dried Milk	—	2	—	—	2	—
Foodstuff	15	—	—	—	—	12
Tobacco	—	—	1	—	-	—
Insecticides	35	—	—	—	—	—
Gas Tests (drums)	—	—	—	—	—	—
Poisoning Human	39	13	—	—	—	—
Poisoning Animal	—	13	—	—	—	—
Miscellaneous	2	21	11	—	—	9

The number of samples of opium, rum, tissues, milk, pharmaceutical drugs and gas tests all showed an increase whereas those of gandia, wash, wine, bread, edible oil and power alcohol showed a slight decrease.

At the request of the Director of Medical Services, a special investigation was carried out into the possibility of stimulants, in particular strychnine and picrotoxin, being added to the locally produced rum. No evidence of such a practice was found.

The adulteration of milk has again shown no improvement, but of the 738 samples analysed, 55 were received during the last 12 days of December from a special milk unit formed to stop this practice. This unit is still at work and a very large number of samples are still being received. Of the remainder, 178 were received from Port Louis alone, compared with 132 in the previous year. The analysis of reconstituted dried milk was started during the year on behalf of the Education Department to check the quality of the milk supplied to the schoolchildren, and 25 samples were reported upon.

Comparison of the percentage adulteration of fresh milk with the two previous years is given in the table below :—

	1951	*1952*	*1953*
Complying with Government Regulations	24	19	9
Containing less than 5 per cent added water	16	15	17
Containing over 5 per cent added water	56	62	66
Deprived of fat	22	23	21
Added cane sugar	9	26	27

In many cases, the samples analysed failed to comply with the regulations in more than one respect.

At the request of the Director of the Public Works Department, analyses of water from the Piton du Milieu Reservoir were carried out in addition to the monthly examinations of the drinking waters from La Marie and Pailles, Following the lifting of restrictions on the importation of edible oils, the examination of these oils, for the Controller of Supplies, ceased in the middle of the year. Subsequently, a sample of cotton seed oil by the Medical Officer of Health, was found to be crude cotton seed oil.

Samples of denatured spirits were received for the first time and, with the exception of one sample, were found to contain less than the minimun of 85 per cent alcohol specified by Government Regulations.

Following the transfer of the chemical section of the Insect Borne Diseases Division, 35 samples comprising solutions and test-papers, were analysed for D.D.T. and B.H.C.

The miscellaneous samples consisted of checking an alcoholmeter and thermometer, one water (false pretences), one suspected aborti-facient (negative) and 2 cases of suspected arson for the Police Department ; one tallow, 4 flavouring essences, 3 cattle mineral mixtures and 3 cutback road oils for the Customs Department ; 2 chemical solutions for the Medical Department and 8 bleaching powders and one petrol (containing 97.5 per cent water) for the Military Authorities.

CUSTOMS LABORATORY

Supervision of the Customs' Laboratory in Port Louis was continued throughout the year. The total number of samples received were 19,583 consisting of :—

Wine—imported	223
Spirits and liqueurs— imported	195
Local Country Liquor (Wine)	18,784
Vinegar—local	50
Vinegar—Imported	6
Tissues	261
Flavouring essences	58
Miscellaneous	6
TOTAL ...	19,583

BIO-CHEMISTRY

A total of 5,576 analyses were carried out in the Bio-Chemistry Laboratory compared with 5,355 last year. The type and number are as follows :—

(*a*) *Urine*

Albumen—qualitative	941
Albumen—quantitative	34
Glucose—qualitative	870
Glucose—quantitative	110
Acetone	16
Bile pigments	16
Reaction	2
Specific Granity	3
Urobilin	8
Chlorides	2
Urea	1
Alcohol	6
Calculus	1
Ehrlich-diazo Reaction	1
Chyle	2
Aceto-acetic-acid	1
Blood	1
Lactose	2
Sulphonamides	1
TOTAL	2,018

(b) Blood

Urea	1,457
Glucose	1,483
Chlorides	17
Total proteins	11
Albumen	5
Globulin	4
Uric Acid	2
Chelesterol	3
Alcohol	175
Calcium	7
Inorganic Phosphates	4
Van Den Bergh Reaction	10
TOTAL	3,178

(c) C.S.F.

Protein	96
Chlorides	84
Glucose	81
Globulin	1
TOTAL	262

(d) Miscellaneous

Fæces—occult blood	10
Fractional Meal Test	3
Pleural fluid	2
Liquid from cyst	1
Fasting juice	1
Cow Milk	1
TOTAL	18
GRAND TOTAL	5,476

The following officers left the Colony on overseas' leave during the year :—

Miss A. de Gersigny, Mr. R. Rivalland and Miss L. Webb, the last on study leave.

Dr. S. G. Cowper, the Pathologist, returned to the United Kingdom after completion of his 3-year contract.

Mr. K. Topsy returned to the Colony after almost two years of study leave in England, and is now seconded for duty to the chemical Division for the testing of insecticides.

During the absence of Mr. Rivalland, his duties were performed by Mr. E. Hervel.

One post of Laboratory Assistant, Pathology and one of Junior Laboratory Assistant were created during this financial year. Mr. Dorval, Junior Laboratory Assistant was promoted to the former post and Messrs. B. Channe Vy and R. Dassin were appointed Junior Laboratory Assistants, one to fill the new post, the other to fill the post left vacant by Mr. L. Dorval's promotion.

As usual, the number of examinations carried out during the year by the Central Laboratory and its branches show a substantial increase over the previous year.

Central Laboratory (Clinical)	41,061	TOTAL 75,210
Chemical Division	13,280	
Civil Hospital Branch	11,406	
Victoria Hospital Branch	9,463	

This constant increase is throwing a heavy strain on the staff and if it continues—I have good reason to believe it will—we shall be forced to have a bigger staff and more financial allowance for the upkeep of the laboratory.

In spite of being hard pressed routine work, new techniques have been tried out during the year, those found satisfactory have been introduced and old ones discarded. Examples of new techniques : Gonococcal Complement Fixation test, Selenite Medium for the isolation of Salmonella Typhi, Microculture and Sentivity testing of M. tuberculosis and the Prenantal Sex Determinatal test, this is still on trial. The Kline Wassermann tests are now routinely employed as a check to the Kahn test.

Owing to the recent vogue of Blood Transfusion Therapy, the Senior Pathologist decided to attempt a preliminary blood group survey of the heterogenous inhabitants of this island.

In the course of the survey, samples were taken from the blood of Indians, Chinese, Creoles and Europeans, sent to the laboratory for other purposes. No attempt has been made to ascertain the purity of each race, as it is rather of a delicate nature.

All the specimens were tested with Anti A, Anti A_1, where relevant and Anti B. They were also tested for the R H system with Anti C, Anti D, Anti E and Antic. The anti sera for the negative genes *d* and *e* were not available, nor were the Anti M and Anti N, these were reluctantly omitted. We hope to be able to obtain all the sera in the future and have a more complete survey.

The testing sera were kindly supplied by the Blood Group Reference Laboratory, Lister Institute, London.

The results obtained are tabulated below. The number of persons tested from each individual race are also tabulated, though they are too few to be of any statistical value, yet they do give some idea of the distribution of groups. As will be observed out of 111 blood tested only 2 were R H negative and they were both of European origin :—

		A_1	A_2	A_1B	A_2B	O	B
Indians	28	7	1	0	0	11	9
Creoles	30	9	1	0	0	15	5
Chinese	24	6	1	1	0	10	6
Europeans	29	8	2	1	0	16	2
TOTAL ...	111	30	5	2	0	52	22

R H SYSTEM

		cCDe	*cCDE*	*ccDe*	*CCDe*	*ccDE*	*CCDE*	*cCde*	*ccde*
Indians	28	10	8	2	6	1	1	0	0
Creoles	30	10	8	3	5	3	0	1	0
Chinese	24	3	9	0	8	4	0	0	0
Europeans	29	6	5	4	8	4	0	1	2
TOTAL ...	111	29	30	9	27	12	1	2	2

I would like to tender my warmest thanks to the members of the staff of the Central Laboratory and its branches for their devotion to duty and their loyal cooperation throughout the year.

A. NG CHHUNG HIN,
Senior Pathologist.

APPENDIX II

Annual Report on the Dependency of Rodrigues for 1953

1953 has been a hectic year in Rodrigues and with three epidemics kept the medical staff on the go, right through.

Rodrigues boasts of a healthy tropical climate but unfortunately this year very heavy rains and cyclonic weather affected adversely the food crops of the population namely : maize, tapioca and sweet potatoes which form their basic food. With this the population eats salt-fish and very little meat ; milk, eggs and vegetables do not form much part of their diet. With the failure of their crop the inhabitants relied more on rice which, being imported, is expensive. Fruits are scarce in Rodrigues. This general deterioration of the food situation led to more marked cases of anæmia and avitaminosis.

Families in Rodrigues live in small one or two-roomed thatched houses and usually have five or more children, so that overcrowding is very marked. However, as most of the day they lead an open air out-door life, the full ill effects of overcrowding is not felt. This year however has shown a definite increase in the number of tuberculosis cases.

Piped water is obtainable at Port Mathurin, Anse aux Anglais, Oyster Bay and La Ferme. Elsewhere water is obtained from wells, springs and rivers. The main water supply is not passed through any process of purification or filtering, and following heavy rains gets very muddy and contaminated. The population has been advised to boil their water for drinking purposes, samples of tap water are periodically sent for analysis. Rain water is stored in tanks for time of drought.

An epidemic of influenza complicated by bronchitis and pneumonia started in March and was immediately followed by an epidemic of whooping cough which caused a number of deaths, mainly among the infant population. Pertussis vaccine is expected soon to prevent further epidemics.

Cattle and pigs are kept very near human habitations and with the arrival of summer caused a great increase in flies ; this together with water pollution started the usual epidemic of gastro-enteritis but, thanks to modern chemotherapy, few deaths occurred.

A Senior Sanitary Inspector has joined the staff since July and carried out sanitary measures under the supervision of the Government Medical Officer who is the sanitary authority in Rodrigues. He exercises direct supervision of the night soil and scavenging services of Port Mathurin, inspects butcher's shops ; food stuffs, mineral waters, meat, and makes house to house and school visits with the purpose of educating the local population in sanitation ; and they have shown willing co-operation.

Cattle and pigs are slaughtered in the open but this will be soon a thing of the past as an abattoir is now in the process of being erected. It will have meat stalls attached to it and we shall be rid of the small cubicles previously used as meat shops.

A species of large red ants invaded some districts of Rodrigues, causing discomfort and minor injuries to the local population. They have been however almost stamped out by a campaign of Gammexane.

DDT spraying was carried out in many houses ; flies have acquired resistance to it now, but it is still useful against cockroaches, mosquitoes and other insects.

His Excellency the Governor accompanied by the Director of Medical Services visited the hospitals in Rodrigues in November this year and expressed satisfaction at the improvements carried out since his last visit in October, 1952. This was also the second visit of the Director of Medical Services who at a first visit in May has expressed his appreciation of the work carried out by the staff.

The Deputy Director of Medical Services also visited the Island in July nd showed interest in the sanitation problems confronting us.

The Government Medical Services provided the following amenities to the popula,ion of Rodrigues this year : Dental, Orthopaedic, Maternity, child welfare and hospital services.

The Orthopaedic Assistant Surgeon visited the Island for a period of three weeks in May and attended to orthopaedic cases here and transferred ten patients to Mauritius for further treatment. The Government Dentist came in July with part of the mobile dental equipment and stayed two months in Rodrigues. He was very impressed by the poor quality of teeth generally. This is to be expected considering the low consumption of milk in the average diet. The maternity and Child Welfare Service comprises regular ante-natal clinics twice a week and distribution of milk to babies under 1 year and over if necessary ; milk being provided by the Public Assistance Department.

Government provides a free hospital service to the population of Rodrigues. This consist of a hospital and maternity annexe at Port Mathurin, a hospital at Mont Lubin and a hospital at La Ferme.

During the year the following improvements and alterations were carried out by the Public Works Department on the advice of the Government Medical Officer.

Port Mathurin Hospital.—The male and female wards of this hospital were enlarged, a new operating theatre built, allowing the old one to be used for surgical dressings, and the stores enlarged. The main and delivery wards were enlarged.

Mont Lubin Hospital.—A small verandah for use as waiting room and a corridor dividing male and female wards. A maternity centre is being erected and comprises a Receiving Room, Delivery Room and large ward with conveniences attached ; it is nearing completion.

Houses for the Sanitary Inspector and the midwife for Mont Lubin were completed in 1953. A new room has been added to the Government Medical Officer's quarters.

Staff.—The staff has been increased by a Nurse at Port Mathurin. The present staff now comprises a Dresser Grade II, a Nurse and two midwives at Port Mathurin, two dressers at Mont Lubin and two dressers at la Ferme. Servants have been increased in number to provide for a day and night service.

The pharmacies of the hospitals are well stocked and patients received drugs free of charge. There are enough surgical implements to carry out most operations. Dental equipment was received during the year.

Food is prepared by a contractor at an agreed price.

Patients are carried to and from hospitals by porters in long canvas chairs strapped to poles. The Government Medical Officer goes to Mont Lubin on mule and to *La Ferme* by motor boat.

HOSPITAL STATISTICS

Port Mathurin Hospital :—

Out patient attendances	13,756	
Admissions	1,390	(an increase of 459 on last year.)
Operations	105	(this includes 28 fractures, 7 appendicectomies 4 Hernia 1 perforation of intestine 1 Mastoidectomy 1 Hysterectomy 2 Tendon repairs.)
Dental extractions	266	(not counting those of dentist.)
Vaccinations	128	
Deaths	37	

Causes of death :—

Congenital debility	2
Prematurity	2
Bronchitis and Pheumonia	5
Whooping cough	10
Gastro enteritis	8
Meningitis	3
Tetanus	1
Peritonitis	2
Congenital syphilis	1
Cerebral thrombosis	2
Cerebral abscess	1

Maternity :—

Ante-natal clinic :—

No. of patients examined	279
Confined	114
Still births	7
Deaths	Nil
Operations	3

Three internal versions, one followed by application of forceps.

Mont Lubin Hospital :—

Out patient attendances	8,862	
Admissions	435	(an increase of 172 on last year)
Minor patients	63	
Dental extractions	225	
Vaccinations	120	
Deaths	19	

Causes of death :—

Whooping cough	7
Bronchitis and Pneumonia	5
Gastro enteritis	2
Heart failure	3
Severe anaemia	1
Meningitis	1

La Ferme Hospital :—

Out patient attendances	11,991	
Admissions	277	(an increass of 171 on last year)
Minor patients	135	
Dental extractions	181	
Vaccinations	141	
Deaths	13	

Causes of death :—

Bronchitis and Phneumonia	7
Gastro enteritis	5
Whooping cough	1

The most prevailing diseases in Rodrigues were anaemia, avitaminosis, bronchitis, pheumonia, whooping cough, ascariasis, venereal diseases, gastro enteritis.

Deaths from Tuberculosis were 15

VITAL STATISTICS

The excess of births over deaths in 1953 was 281.

The population in December 1953 is estimated at 15,785.

Births.—The total number of live births was 532 and this corresponds to a birth rate of 33·7.

Still-births.—The number of still births is 19.

Deaths.—Deaths registered in Rodrigues numbered 251 corresponding to a rate of 15·9.

Maternal mortality ...	Nil
Infantile mortality rate ...	Infants under one year per 1,000 live births—189·8

The main causes of death in infants were bronchitis, whooping cough and gastro enteritis.

Miscellaneous.—12 cases were referred to Mauritius at Government expense for treatment. No case of leprosy was sent this year. Three mental patients were sent by the Police.

Meat Inspections—174 heads of cattle were slaughtered and inspected as under :—

Cows	74
Heifers	30
Bulls	62
Bullocks	3
Calves	5

On two occasions viscera were seized.

Prisons.—Prisons are regularly visited and prisoners examined on admission and discharge.

Schools.—Schools were visited during the year by the Sanitary Inspector, the Dentist and the Government Medical Officer.

Port.—Pratique was given to all vessels that called at Port Mathurin this year.

Social.—On Coronation Day, cakes and lemonade and a souvenir were provided by Government to hospital patients. For Christmas, trees were placed in all hospitals, and cakes, lemonade and gifts distributed to the patients by Father Christmas.

Conclusion.—The three dangers to the health of the population in Rodrigues are overcrowding in the house, the water supply and defective nutrition. With the increased attention which is being given to these problems, there is reason to hope that conditions will improve.

G. R. BENETT,
G.M.O. Rodrigues.

APPENDIX III

Entomology Research Section

The salient features in the report submitted by the Research Entomologist, Mr. James G. Halcrow, are given below :—

Local conditions circumscribe research. Work has been delayed this year by the closure of the Malaria Eradication Scheme and the subsequent formation of an Entomological Research Unit. The erection of quarters at Richelieu for the newly formed unit was also a small source of delay.

The investigation of *gambiæ* in its habitat is the mainstay of the whole research programme. Some research into the newer insecticides has been attempted although the application of insecticides and the study of malaria is the work of other units.

There is no evidence of resistance to D.D.T. It would be unwise to talk of resistance in Mauritian mosquitœs. To bring the insecticide to the insect is still the maxim to be held. The insecticide is just not reaching the insect, nor is toxic application rate maintained.

It may be wondered if house spraying is economically worth while when the density of *gambiæ* per house per night is much less that one. To find *gambiæ* in a house is now something rather wonderful.

With the discovery that evidence for the vectorial capacity of *gambiae* in Mauritius does not exist, many dissections have been performed. All were negative. To-day with malaria at a very low ebb, hundreds of thousands of dissections would be needed to find that extremely rare insect, a mosquito infected and infective for malaria.

The annual visits of the supervisory officers from Africa is looked forward to with interest, the visits may well be of value.

Staff

(*a*) Paid under Development and Welfare Schemes R 543 and R 543 A :—

1	Entomologist
1	Senior Overseer
2	Laboratory Assistants
18	Other staff

(*b*) Staff of the Medical Entomologist, attached to the Unit for administrative and executive purposes until a medical entomologist is appointed to the Colony. These personnel are paid out of Local Government Funds :—

2	Laboratory Assistants
11	Senior Workers
14	Other staff

Cost of Research. Money allocated to the Unit and administered by the Government of Mauritius :—

	Rs.
1953–54	68,888
1954–55	69,993
1955–56	77,806

These sums include provision for Leave and Passages.

Under Scheme R. 563, a sum of £480 has been allocated to pay expenses of a supervisory officer from Africa, who will make annual visits, 1954, 1955, 1956.

The limits of the winter breeding of A. gambiae

Mc Gregor (1923) showed that *gambiae* was able to complete its life cycle during winter at such places as Rose Belle and Curepipe. Some doubt has always been thrown on his observations. *Gambiae* has been observed to complete its life cycle during the winter of 1953, at all altitudes from sea level to 1,700 feet. *Gambiae* was found breeding actively at Trianon (1,000 ft) Phoenix and Highlands (1,400 ft) and the outskirts of Curepipe (1,700 ft) during the winter of 1953.*

It is only fair to say that this conflicts with the evidence presented to the entomologist by the Medecin Commandant of the Service Antipaludique of Madagascar. During the visit of the entomologist to this unit in 1952, evidence was brought forward which showed the hibernation of *gambiae*, and the greater activity of *marshalli* during the winter. With the subsequent re-activation of *gambiae*, the other anopheline, *marshalli* decreased to a low ebb.

The entomologist believes that this indicates the vastly different behaviour of *gambiae* when faced with environmental conditions of a continent-Africa, a pseudo continent-Madagascar, and a pseudo oceanic island-Mauritius. African conditions can never be paralleled in Mauritius, many difficulties have arisen through attempting to do so.

The summer spread of A. Gambiæ.—Observations during the summer month in the Rivière Noire district showed not only a spread of *gambiae* from the coast, but also the rapid infection of the land from the "Chasse Country." This was most noticeable in the Yemen-Tamarin area.

Abberrant distribution of A. Gambiae.—At Mapou, 4th stage larvæ only were found in a pool outside the house of the manager of a sugar estate. Only 4th stage larvæ were found, 1st, 2nd, 3rd stage pupae, adults or eggs or cast skins were never found. Nor were larvae found anywhere else but in this one pool. It is thought to be a case of transportation of larvae with malicious intent. Such infections of clean sites by malcontents is by no means unknown.

Larval Habitats of A. Gambiae.—To assure some uniformity in reporting, the classification of larval habitats as given on pages 71–72 of Russel's Malaria has been adopted by this unit, with minor adjustments.

Some difficulties have been encountered ; the subtle difference between marsh and swamp is not always appreciated or even remembered. To most, if not all, of the staff of the entomologist, these words are synonymous. Again although a *crab-hole* is something clear and definite to them, it could well be a synonym for *brackish water in small accumulations.*

Frequently the objection is raised that the description *rock-holes* is untrue, as it refers to pools with rocky sides. In this report it refers to small breeding pools whose sides and bottom are of grey basaltic rock.

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* It can thus be said that breeding can take place in all the inhabited areas of Mauritius, only mountain peaks being above 1,700 feet.

The classification and results are as follows :—

	Observations
I. PERMANENT OR SEMI-PERMANENT STANDING FRESH WATER	
1. Large marshes, or marshy zones of lakes	45
2. Small ponds, pools, pits, stagnant canals or ditches ...	40
3. Spring-fed pools and seepages	41
4. Standing agricultural water, cane fields, rice fields ...	195
5. Wells	1
6. Swamps (inundated forests)	2
7. Forest pools (well shaded pools)...	5
II. TRANSIENT FRESH WATAR GROUND POOLS	
1. Open pools	15
2. Cart tracks, hoof prints and the like	20
III. PERMANENT OR SEMI-PERMANENT RUNNING FRESH WATER	
1. Open streams with vegetation	23
2. Open gravel stream beds	NIL
3. Canals and ditches...	46
4. Forest streams	1
IV. CONTAINER HABITATS	
1. Rock holes	9
2. Tree holes	NIL
3. Special plant associations	NIL
4 Containers, such as shells, gutters, tins...	NIL
5. Crab-holes and mud cracks	7
V. BRACKISH WATER	
1. Brackish marshes, ponds, swamps (not tidal)	4
2. Tidal swamp	2
3. Brackish water in small accumulations	NIL
TOTAL NUMBER OF OBSERVATIONS ...	456

FREQUENCY PERCENTAGE

		per cent
I 4.	Standing agricultural water	43·00
III 2.	Canals and ditches	10·00
I 1.	Large marshes or marsby zones of lakes ...	10 00
	Sundry habitats	37·00
		100·00

HABITATS NOT FREQUENTED

III 2. Open gravel streams
IV 2. Tree holes
IV 3. Special plant associations
IV 4. Containers, such as shells, gutters, tins
V 3. Brackish waters in small accumulations*

It may be seen that *gambiae* is breeding mainly in man-made sites. Faulty irrigation which could be corrected causes the majority of breeding sites. But faultless irrigation is not a panacea for *gambiae* breeding.

The breeding sites in cane-fields are transitory. Rarely do they allow for the emergence of more than one generation. As one breeding site drains away anothor arises merely a few feet away. To mark, record or control such sites by larvicides is a never-to-be-completed job. The entomologist rarely records breeding sites by map references, they are so transitory that it has been deemed better just to remember the general *gambiae* breeding sites. When *gambiae* breeding sites are needed for experiment they are easily found.

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*This is so skin to crab-holes (IV5) that it can be disregarded, *Larval associations.*—Records have been made of the association of *gambiae* with other culicine larvae :—

Gambiae with *Gambiae* (*Gambiae* seul)	456 times	+ + + + + +
Gambiae with *C. tritaeniorhyncus*	29 times	+ +
Gambiae with *A. constani*	14 times	+ +
Gambiae with *A. maculipalpis*	1	+
Gambiae with *C. Univittatus*	1	+
Gambiae with *Ae. fowleri*	1	+

The tendency of *gambiea* larvae to form pure stands is marked. The absence of association with the predatory larvae of *Aedes (Mucidus) tonkingi* and *Culex (Lutzia) tigripes* is also noticeable.

More work on this aspect of synoecology is required as it is felt that in the coastal swamps the association of *gambiae* with the larvae of *C. tritaeniorhyncus*, *C. univittatus* and *C. poicilipes*, must be greater than is shown in the summary overleaf. Larval succession has never been plainly observed.

Swarming.—A swarm of male *gambiae* with now and then some *fatigans* was observed during early September. The swarm lasted from 6.25 p.m. Local Time (G.M.T. + 4 hours) until 6.42 p.m. L.T. The swarm was dense and was formed over a clump of Cannas (Order : Cannaceae)

Three nights later, at 6.20 p.m. L.T. a second swarm was seen to be formed above a bamboo hedge. Duration of the swarm was not observed. This swam was frequently scattered by two anisopterous dragonflies which hawked in and out of the swarm. The swarm reformed after each attack.

Both swarms were active after sunset and during the half light of dusk; wind was negligible on both occasions.

Deviation of Mosquitoes.—By arrangement with Dr. Weitz of the Lister Institute, stomach smears of blood-fed mosquitoes have been sent at regular intervals for precipitin testing.

The word deviation is used in preference to zoophilic or anthropophilic. Zoophilic has a bastard definition when the human animal is excluded from the scope of its definition.

A. gambiae

Village	*Place*	*Number*	+ *Human* %	+ *Cattle* %
Kain	Cowshed	5	Nil	100
Gauthier	Cowshed	5	60 + +	80
Gros Cailloux	Cowshed	3	Nil	66
Camp Créoles	Cowshed	12	Nil	100
Camp Créoles	Cowshed	15	Nil	60
Camp Créoles	House	11	60	40
Camp Créoles	Cowshed	2	100	Nil
Bambous	Cowshed	8	Nil	100
Belle Vue	Cowshed	35	3	97
Palmar	Cowsheds	2	100	Nil
Islands + + +	Kegs	35	Nil	50 ×

+ + Mixed Feed
+ + + Uninhabited islands off the N.E. Coast
× 50% had fed on deer (*Rus unicolor rus*).

A. maculipalpis

Tamarin	Cowshed	2	Nil	100
Gauthier	Cowshed	4	Nil	100
Albion	Cowshed	4	Nil	100

A. Coustani

Camp Créoles	Cowshed	8	Nil	88
Gauthier	Cowshed	2	Nil	100
Gauthier	Cowshed	30	55	45
Gros Cailloux	Cowshed	16	Nil	100
Gros Cailloux	Cowshed	8	12	88
Tamarin	Cowshed	4	Nil	100
Kain	Cowshed	9	Nil	100
Bambous	Cowshed	3	Nil	100
Belle Vue	Cowshed	50	25	65

Aedes fowleri

Le Morne	House	1	100	Nil
Argy	Cowshed	12	16	84
Gauthier	Cowshed	8	50 ×	100

× Mixed Feed

Culex fatigans

Bambous	Cowshed	1	Nil	100
Camp Créoles	Cowshed	5	100	Nil

Culex poicilipes

Palmar	House	5	100	Nil

Culex triteaniorhyncus

Palmar	House	10	100	Nil

Some 200 blood smears were despatched to U.K. in December. The results will be included in the report for 1954.

Considering *gambiae* seul, there is neither a marked deviation to man or to cattle. Indiscriminate feeding on man and cattle seem to be occurring. This accords well with observations made at night. Vide—Nocturnal activity of A. Gambiae in Mauritius, an interim report of June 1953.

Maculipalpis is of interest as no one in Mauritius was at all sure of its feed. Mac Gregor (1923) had mentioned that experimentally it could transmit malaria. Of course 10 smears are not conclusive evidence, but time will alter this. It is a "shy" mosquito difficult to find and to collect.

Blood-fed mosquitoes are rarely collected from houses because the entomologist has no power of entry to any building or premises after sunset. In accordance with Ordinance No. 31 of 1948, the entomologist's power of entry runs from sunrise to sunset. To depend on the goodwill of the people is not always possible—workers who must rise at 5.0 a.m. to work in the cane fields have no goodwill to hourly intrusions upon their sleep. As *gambiae* is only a semi-domestic mosquito, at the best, the entomologist makes no attempts to bluff his way into houses or to use powers which he does not possess, and which the villagers know quite well he does not possess.

It may be mentioned that power of entry is never used. Full co-operation has always been given during day-time. The problems of the Chasse forests are peculiar, they are complicated by such affairs as mating seasons, breeding seasons and shooting seasons. These problems are not, however, unsurmountable, Feeding experiments. A few experiments have been attempted in feeding *gambiae* on alleged malarious patients. The object was to ascertain if the malaria parasite could develop in the Mauritian strain of *gambiae.*

The results were worthless.

No patient will allow himself to be bitten by a sufficient number of mosquitoes. Non-feeders and subsequent mortality must be allowed for. Thirty mosquitoes are insufficient. Transporting mosquitoes to Army patients involves a drop of 10 degrees Centigrade ; the mosquitoes are comatose and not at all inclined to feed. Nervous patients complaining of pain before the mosquitoes have commenced to feed, kill many by their nervous movements.

Possibly the truth is that *gambiae* is but a poor vector in Mauritius, capable of low level transmission ; but needing *funestus* to build malaria to epidemic proportions. If *gambiae* is an indifferent and indiscriminate feeder, then the malarial parasite will be dissipated by successive feeds on man and cattle.

Corps de Garde.—An attempt to survey breeding sites on the mountain known as the Corps de Garde, was made early in 1953. Heavy rains which turned the mountain paths into knee-deep streams defeated the attempt. *Anopheles coustani*, *Aedes albopictus* and *Aedes mascarensis* were found breeding above 1,000 feet.

Black River Gorges.—The gorges of the Black River were surveyed in early 1953. Here it is that the remnants of the original flora and fauna can be found, excepting of course the Dodo. *Aedes fowleri*. *Aedes albopictus* and *Anopleles coustani* were found to be breeding actively in the gorges. The general gloom and peculiar dryness of these gorges may well prevent the establishment of *gambiae.* From an entomological viewpoint, ignoring mosquitoes, this survey was of great value.

Asthenobiosis.—By definition, " Spontaneous biological inertia ", is a form of hibernation due to an inner rhythm of the species, more or less independant of environmental conditions.

Such a phenomenon was seen to occur in 4th stage larvae of *Orthopodomvia arboricollis.* They remained in this instar for 193 days, and were active throughout. This peculiar and rare sylvan mosquito has never been captured in the adult stage, adults are known from reared material. Its larvae are noteworthy as they are sky-blue in colour. There are two pubal forms varying in colour and chaetotaxy. Both larvae and adults can tolerate for long intervals strong concentrations of insecticides, though death dœs occur.

Stomach smears.—Preliminary work to determine the sugar content of the stomachs of unfed female and male mosquitoes have been commenced. The study proper will begin next year.

Dissections.—Dissections to detect infected mosquitoes have been conducted for the whole of the year. No positive dissections have been found. With malaria at a low ebb it would need tens of thousands of dissections before a positive could be found.

Filarial dissections have also been done. Some care is needed here as *C. fatigans* in Mauritius is the vector of Dirofilarial infections as well as Bancroftian filariasis, Positive filarial infections reported herein are those of *W. bancrofti.*

A useful filarial stain for filarial forms dissected from mosquitoes is :—

1. Allow slide to nearly dry or dry
2) Fix 3 minutes in Schaudins Solution
   Fix 30 seconds Glacial Acetic Acid
3. Wash 50 per cent Alcohol 10 minutes
   30 per cent Alcohol 10 minutes
   Water 10 minutes
4. Stain Ehrlich-Biondi-Heidenhain Stain 1 hour
5. Dehydrate as for Canada Balsam Mounts and mount on Neutral Canada Balsam

Schaudins Solution : 1 part Sat Mercuric chloride
2 parts 90 per cent alcohol
5 per cent Glacial acetic acid.

Stain is used at strengths of 1 : 100 to 1 : 10 with water as needed. For rapid, deep staining it can be used undiluted.

After dissection filarial forms are classified into their various stages, but as a rule only two main stages are recognised: " sausage stage " and " infective stage," the latter is a proboscal infection. *A. constani* appears to encyst the filarial forms at the sausage stage. *A. Gambiae* and *C. fatigans* can bear the filarial forms to the completion of its life cycle.

RESULTS :

Species	*Examined*	*Malarial infections*	*Filaria*
A. Gambiae	1020	Nil	10
A. maculipalpis	50	Nil	Nil
A. Constani	1624	Nil	36
C. fatigans	854	Nil	12
C. tritaeniorhyncus	2	Nil	Nil
Ae. fowleri	160	Nil	Nil
Ae. albopictus	2	Nil	Nil
Lutzia trigripes	2	Nil	Nil
TOTAL ...	3714	Nil	58

Longevity of A. Gambiae—The minimum life span of the adult female gambiae in the lab. is 4 days. The maximum is 20 days. The average and usual life span in 13 days. No comparable figures are available for " wild " mosquitœs. It has been observed that very few multipars are ever caught.

Gonotrophic Cycles.—All attempts to study this phenomenon have been defeated by extensive rodent damage.

Insectary at Richelieu.—Rodent damage has been extensive. Heavy and continued mortality in the insect colonies was traced at the end of the year to contamination from insectary stores which had been sprayed, while they were in the main stores. Few places are unsprayed in the Colony now. Keeping a colony of mosquitoes is difficult.

The clothes of the staff are contaminated after entering treated buildings, cages used in the field are quickly contaminated, this is a further source of contamination for the insectary.

Sex Ratio.—Random selections of 1st stage larvæ of *A. gambiae* gave the following results :—

331 females : 279 males

Numerical Density.—The *gambiae* density has, at times, fluctuated so low as to cause some unemployment of the staff. Other culicine work must always be available. The following figures speak for themselves :—

	man hours	*gambiae*
16th September, 1953	128	3
14th September, 1953	128	7
29th October, 1953	128	20

The catches were made in known *gambiae* areas which were once hyperendemic.

The density of *gambiae* in houses is much less than one per house per night ; that of cowsheds from 1 to 50 per cowshed per night.

On 8th December, 1953, 10 *gambiae* were obtained from 69 houses. Is the continuance of house spraying justified ?

The records of the Malaria Eradication Scheme show that *gambiae*, when compared to funestus or other mosquitoes, was a very indifferent house frequenter.

M.E.S. Report 1949.

Before island wide spraying :—

Houses	*Gambiae*	*Funestus*
12,748	4,686	15,279
	1 : 4 Ratio	

M.E.S. Report 1950.

Houses	*Gambiae*	*Funestus*
7,767	2,486	31,196
	1 : 14 Ratio	

Savanne—Grand-Port.—2,400 man-hours have been used in searching the southern area of the Colony for *gambiae*. The area extends from Baie du Cap to Grand River S.E. Only one *gambiae* breeding site was found. This at Bel Ombre Sugar Estate. Neither pupæ nor adults developed from this pool. The larvæ died from unknown causes.

RESTING MOSQUITOES

Female gambiæ.—Female *gambiæ* show a preference for resting sites as shown below. In cowsheds there is no marked preference for the upper or lower surfaces of the wall, or for the roof. Preference is shown for a resting position on the extreme end of a wisp of straw, that usually protrudes from the walls and roofs.

Cowsheds	+ + + + + + + + + + + +	
Goatsheds	+ + + + +	
Rock crevices	+ + +	To include rock walls
Grass	+ + +	Usually termed "Bush"
Sugar cane	+ +	Standing crop
Houses	+	
Abandoned buildings ...	+	

Male gambiae :—

Rock crevices	+ + + + + + + + + + + +
Grass	+ + + + + +
Sugar cane	+ +
Houses	+
Goatsheds	+
Cowsheds	+
Abandoned buildings ...	+

The natural salinity and pH of breeding waters.—pH recordings were stopped when the Government Chemist pointed out that with the soft waters of Mauritius, it was the pH of the indicator solution that was being investigated.

Salinity estimations by Mohr's Method has also stopped as there appeared to be very little value in the results. *Gambiæ* can apparently tolerate all ranges of salinity from zero up to 30.6 grams NaCl per litre. This is the range of the Salt Water *gambiæ* also.

Parasites. Salt Water Gambiæ.—A fungus, believed to be *Cœlomomyces* sps., has been seen to attack larvæ of the salt water *gambiæ*.. A ciliate, very like Balantidium coli, has been seen in the abdomen of parasitized larvæ. Other ciliate forms, gregarines and nematodes have also been seen.

Fresh Water Gambiæ.—It was thought that larvæ of fresh water *gambiæ* were immune from attack by parasites. On 22nd June, 1953 larvae from Petite Rivière Noire, were found to be dying in large numbers, the subsequent mortality was 100 per cent. Dissection revealed small and large greenish worms.

Predators.—The following list is the result of tentative indentification.

Order. Hemiptera :—
Gerris sps, *Ranatra* sps, *Notonectidae* sps.

Order Coleoptera :—
Cybisteter tripunctatus Ol.
Dineutes indus F. "Gardien di lo"
Dineutes subspinosus Klug. "Gardien di lo"
Hydrous aculeatus Soldier.

The dipterous and culicine predators, *Aedes Mucidus Tonkingi* and *Culex Lutzia tigripes* are never associated with gambiae.

Insecticides.—The investigation of insecticides has been largely of the nature of small field trials, using Dieldrin 50 per cent wettable powder and E.P.N. 300.

CAMP CREOLES EXPERIMENT A.

Residual spraying of a Mauritian Village with Dieldrin wettable powder.

Camp Creoles, in the Black River District, was sprayed with dieldrin wettable powder. Mosquito activity was studied for 16 weeks before spraying, and weekly catches were made for 5 months after spraying to assess the toxicity and residual activity of the insecticide under tropical conditions.

The village had 69 houses, 32 cowsheds, 12 goat sheds and a population of 300–350 people. Houses were of aloe poles thatched with sugar-cane trash or marsh grass. Walls and floors were plastered with a mixture containing mud, dung, sand and sometimes a little cement ; interior walls were often newspaper lined. There were no smoke exits, and frequently no windows. Doors were ill-fitting.

Spraying took place in December 1952 at 35 mgm per square foot ; 67 gallons of spray were used on 56,595 square feet of wall surface. Precautions were taken to protect both spraying operatives and the inhabitants of sprayed houses.

A puppy and a kitten were accidentally contaminated. The puppy showed no ill-effects. The kitten however showed marked symptoms of poisoning although contamination of the fur had been light. This was considered to be the result of the animal ingesting dieldrin in washing itself.

Results

(*a*) *Before Spraying.*—The inhabitants resented hourly intrusions into their homes at night, and mosquito catching was therefore confined to two cowsheds and the dimly lit interior of a large Austin van.

Monthly summaries

	A. gambiae		*A. constani*		*C. fatigans*	
1952	*Cowsheds*	*Van*	*Cowsheds*	*Van*	*Cowsheds*	*Van*
August	170	44	483	91	26	14
September	66	8	484	78	3	5
October	130	52	169	169	8	8
November	109	234	199	363	5	10

A dawn catch was made on 26.8.52 in every house and cowshed in the village. The following interesting results were obtained :—

In 69 houses	37 *C. fatigans*	No anophelines
In 32 cowsheds	No *C. fatigans*	18 *A. gambiæ*

A second dawn catch on 5.10.52 showed the following :—

In 69 houses	56 *C. fatigans*	No anophelines
In 32 cowsheds	No *C. fatigans*	8 *A. gambiæ*

The following mosquitoes were also caught in small numbers, both in the cowsheds and in the van ; *Anopheles maculipalpis*, *Aedes fowleri*, Aedes albopictus and *Culex poicilipes* ; a single female specimen of Lutzia Tigripes was captured in one of the cowsheds.

Cockroaches, *Periplaneta americana* and *Periplaneta australasiae* were everywhere abundant. The house-fly population became troublesome during late November.

(*b*) *After spraying.*—Night catches were resumed one week after spraying in the same cowsheds and in the unsprayed van.

Results are as follows :—

	A. gambiae		*A. constani*		*C. fatigans*	
	Cowsheds	*Van*	*Cowsheds*	*Van*	*Cowsheds*	*Van*
1st week after spraying	0	38	4	64	7	35
2nd do	3	20	6	13	1	14
3rd do	0	107	14	49	4	10
4th do	10	53	5	34	0	7
8th do	7	3	15	48	3	26
16th do	7	1	19	28	1	28
24th do	24	1	53	9	1	1

All *gambia* from treated cowsheds survived at least 48 hours after capture. Many laid viable eggs.

Three houses were searched from 6.0 p.m. to 6.0 a.m. 24 days after spraying, with the following results :—

	gambiae	*coustani*	*fatigans*
House A	0	15	3
House B	1	17	34
House C	5	10	4

The inhabitants gave evidence that cockroaches declined sharply in numbers but 2 weeks after spraying numbers had returned to normal. This rapid recovery was probably due to the non-spraying of the floors, and to the insects frequenting rubbish heaps outdoors. Flies were completely unaffected, probably due to their outdoor breeding habits.

Discussion.—It is considered that a residual treatment to be efficient must kill all mosquitoes contacting the treated surfaces within 24 hours.

The *gambiæ*, *coustani* and *fatigans* from treated cowsheds however took at least 48 hours after capture to die, and, as many laid viable eggs during this time no permanent reduction in populations can be expected. It may well be that the dosage applied was too small, but the high mammalian toxicity prevents the application of higher dosages.

The number of live mosquitoes taken from treated buildings is one criterion of immediate toxic activity. Excellent results were obtained for three weeks after spraying, but in the 4th–20th weeks an increasing number of live mosquitoes were taken in treated places ; many were observed resting for long periods on sprayed surfaces.

There was no evidence of dieldrin having a repellent or excitant effect on mosquitoes,

Camp Creoles Experiment B

On the 4th December, 1953, one block of this village was sprayed with a new sample of dieldrin wettable powder. The other village block was sprayed with DDT at the normal dosage. It is yet too early to report on this experiment.

E.P.N. 300. The village of Gauthier in Black River was sprayed with this insecticide on 9th December, 1953. Initial results were excellent. Used as a larvicide at 0.01 of an ounce to a gallon of water, it gave quite good results.

A. gambiæ, 4th instar :—

	Alive	*Moribund*	*Dead*
1 hour after spraying ...	7	234	284
2 hours do. ...	2	88	435
3 hours do. ...	1	40	484
4 hours do. ...	1	6	518
24 hours do. ...	—	—	525

Culex fatigans, 4th instar :—

	Alive	*Moribund*	*Dead*
1 hour	52	125	18
2 hours	5	99	91
3 hours	3	19	173
4 hours	—	4	191
24 hours	—	—	195

Ae albopictus. 4th instar. :—

	Alive	*Moribund*	*Dead*
1 hour	41	18	1
2 hours	11	41	8
3 hours	7	17	36
4 hours	1	—	59
24 hours	—	—	60

Orthopodomyia arboricollis. 4th instar. :—

	Alive	*Moribund*	*Dead*
1 hour	8	22	—
2 hours	5	18	7
3 hours	4	15	11
4 hours	2	5	23
24 hours	—	—	30

Belle Vue Experiment

An observational study on the efficiency of BHC was made in one cowshed in the village of Belle Vue. The experiment was discontinued to allow for change in the spraying policy.

Catches made 6.0 p.m. to 6.0 a.m. 1 cowshed.

	gambiae
Week before spraying	81
1st week after spraying	6
2nd ,, ...	9
3rd ,, ...	25
4th ,, ...	26

Gros Cailloux Experiment

Eight cowsheds selected at random in this village were treated as follows :—

2 sprayed Dieldrin wettable powder, 2 sprayed BHC wettable powder.

2 sprayed DDT wettable powder, 2 as controls.

The general application rates were 35 m.gms Dieldrin/sq.ft., 10 m.gms BHC/sq.ft., and 100 m.gms DDT/sq.ft.

Change in the spraying policy caused this experiment to cease.

Results :—

	DDT	*BHC*	*Dildrin*	*Control*
Before spraying	*Gambiae*	*Gambiae*	*Gambiae*	*Gambiae*
After spraying :—				
1 week	Nil	*Gambiae*	*Gambiae*	*Gambiae*
2 weeks...	Nil	*Gambiae*	*Gambiae*	*Gambiae*
8 weeks...	Nil	*Gambiae*	*Gambiae*	*Gambiae*
10 weeks...	Nil	*Gambiae*	*Gambiae*	*Gambiae*
12 weeks...	*Gambiae*	*Gambiae*	*Gambiae*	*Gambiae*

B. THE DIVISION OF ENTOMOLOGY

On the 15th of December, 1953, Mr. S. Gebert, the Entomologist was retired upon reaching the age limit, after having served Government for more than thirty six years, thirty two of which were spent in the Health Department.

As the chief interest lies in following the movement of anophelines after the island-wide treatment of dwellings with residual sprays, the staff was mainly employed on mosquito work.

Mosquito surveys.—As in previous years adult mosquitoes were collected in habitations, after knock-downs with pyrethrum spray. The greatest number of houses were searched during the day. In the warm season, however, night investigations were also carried out. As was to be expected collections made during the night yielded a greater number of insects per dwelling.

In all, 13,714 dwellings were searched during both day and night knock-downs, and only 115 *A. gambiæ* were found in them, 84 of which in Black River, leaving 31 for the rest of the island. These figures are of course extremely low and show that *A. gambiæ* keeps away from treated habitations.

The following table gives the details of the work done :—

District	*No. of localities visited*	*No. of dwellings searched*	*Anopheles gambiae*	*Anopheles coustani*	*Aedes Albopictus*	*Culicines*	*Average mosquito per dwelling*
Pamplemousses :—							
Night catches..	10	125	—	1	4	202	1·7
Day catches ...	54	981	2	1	19	2,238	2·3
Rivière du Rempart :—							
Night catches..	23	307	4	52	—	387	1.4
Day catches ...	41	101	9	7	19	2,361	2.3
Flacq :—							
Night catches..	20	416	6	121	10	1,651	4·3
Day catches ...	26	669	4	—	9	1,650	2·5
Grand Port :—							
Night catches,.	20	288	1	3	3	1,688	5·9
Day catches ...	65	1,554	2	8	28	7,611	4·9
Savanne :—							
Night catches..	2	30	—	—	—	113	3·7
Day catches ...	4	49	—	—	1	24	0·5
Black River :—							
Night catches..	39	552	46	34	32	3,091	5·8
Day catches ...	36	1,249	38	11	18	1,357	1·1
Port Louis :—							
Night catches..	14	269	2	—	27	1,288	5
Day catches ...	16	928	—	—	42	3,527	3·8
Moka .—							
Night catches..	2	73	—	—	—	139	1·9
Day catches ...	28	1,957	—	—	196	9,887	5·1
Plaines Wilhems :—							
Day catches ...	19	3,250	1	—	118	11,574	3·6

In addition to species mentioned in the table, were also found : 4 *A. maculipalpis* ; 8 *Aedes fowleri ;* 1 *Lutzia tigripes ;* 4 *Culex tritaeniorhynchus* and 4 *Culex thalassius.*

It should be mentioned that whilst night searches were going on in houses, some of the men stayed outside to see what mosquitœs settled on them. It was found that they were bitten chiefly by *A. gambiae* and *A. coustani*, and to a lesser extent by *Aedes albopictus* and *culicines.* In a good many cases, anophelines were biting outside the dwellings while these mosquitœs were not found in the houses.

The majority of the habitations searched lie in the vicinity of anopheline breeding grounds.

Mosquitœs in cow-sheds.—In all districts, cow-sheds in proximity of breeding grounds were examined for mosquitœs. Hand catches lasting about fifteen minutes per shed were made during daytime and insects caught were brought to the laboratory and bred. Most of the cow-sheds gave positive results as can be seen in the following table :—

TABLE SHOWING NO. OF ADULT MOSQUITOES FOUND IN COW-SHEDS

District	*No. of localities*	*No. of cowsheds*	*Anopheles Gambiae*	*Anopheles coustani*	*Aedes Albopictus*	*Culicines*	*Average mosquito per cowshed*	*Avarcge Anopheles per cow-shed*
Pamplemousses ...	15	31	8	52	—	20	2·6	2
Rivière du Rempart ...	9	39	4	79	—	—	2·1	2·1
Flacq	12	35	3	106	—	36	4.1	3·1
Grand Port	4	14	—	41	—	—	3	3
Black River	30	119	71	119	1	1	1.6	1·6
Port Louis	3	6	—	—	—	24	4	—
Moka	7	14	1	35	—	8	3.1	2·6
Savanne	—	5	—	—	—	—	—	—

In Savanne and Grand Port, no anopheline were found. In the other districts almost all cow-sheds proved positive. In fact, one is almost always certain of finding anophelines in cow-sheds lying in breeding areas. It will be seen from the table that *A. Coustani* were found in greater numbers that *A Gambiœ*. All these cow-sheds had been previously treated with residual sprays. The mosquitœs caught continued to live in the laboratory, and many females laid eggs which hatched out and produced larvæ which were successfully reared to the adult stage.

Anopheles funestus has again not been seen. This anopheline was found for the last time in December 1950. *Aedes œgypti* is another mosquito which seems to have disappeared.

Larval Findings

A. gambiæ.—In spite of several years of intense larviciding, notably in Black River *A. gambiœ* is still the prolific breeder and its larvae have been found in all the breeding-grounds where it has been known to exist ever since larval searches started in the island. This does not exclude parts of Beau Bassin, Rose Hill, Quatre Bornes, Trianon and Highlands S.E.

A. maculipalpis.—Larvae have been found as usual in seepages, chiefly in dark clayey soils on mountain flanks and hill-sides, and in certain cases, in lower ground wherever this type of soil occurs. Breeding has rarely been intense.

Culicines.—Culex fatigans has been found all over the island, in all sorts of breeding-places, very often, in very large numbers.

Other species encountered were *C. tritaeniorhynchus*, *C. thalassius*, *C. univittatus*, *C. rima*, *Lutzia tigripes*, *Aedes fowleri*, *Aedes albopictus*, and *Mucidus Tonkingi.*

The following table shows results of searches for anopheline larvae :—

District	*No. of localities visited*	*No. of localities where larvae found*	
		Anopheles gambiae	*Anopheles maculipalpis*
Pamplemousses	52	31	14
Rivière du Rempart	49	40	—
Flacq	30	16	1
Grand Port	26	6	2
Savane	7	2	—
Black River	66	63	25
Port Louis...	45	12	7
Moka	14	7	—
Plaines Wilhems	37	19	1

Mosquitoes Bred in the Laboratory

All larvae brought to the laboratory were bred, and adults obtained fed so as to have material at hand for educational or experimental purposes. Mosquitoes left over were further bred to ascertain their life-span. 774 adults were thus bred with the following results :—

No. for	*A. gambiae*	*A. maculipalpis*	*A Constani*	*Aedes albopictus*	*C. fatigans*	*O. arboricollis*	*L. tigripes*
1 day	24	3	—	6	—	—	—
2 days	26	—	—	2	—	—	—
3–4 ,, ...	30	2	1	5	—	—	—
5–6 ,, ...	45	3	—	2	1	—	—
7–8 ,, ...	37	3	2	—	2	—	—
9–10 ,, ...	49	7	—	—	—	1	—
11–12 ,, ...	55	4	1	—	—	1	—
13–15 ,, ...	64	10	1	—	1	—	—
16–18 ,, ...	67	6	—	3	—	1	—
19–21 ,, ...	56	6	1	2	—	3	—
22–24 ,, ...	54	6	—	2	2	3	1
25–27 ,, ...	29	4	—	—	—	5	—
28–30 ,, ...	27	1	—	2	—	2	—
31–35 ,, ...	36	—	—	5	1	1	1
36–40 ,, ...	25	5	—	1	—	2	—
41–45 ,, ...	12	2	—	—	—	—	—
47 ,, ...	2	—	—	—	1	1	—
52 ,, ...	1	—	—	—	—	—	1
53 ,, ...	—	—	—	—	1	—	—
55 ,, ...	1	—	—	—	—	—	—
58 ,, ...	—	—	—	—	1	—	—
59 ,, ...	—	—	—	1	—	—	—
62 ,, ...	1	—	—	—	—	—	—
80 ,, ...	—	—	—	—	1	—	—
TOTAL ...	641	62	6	31	11	20	3

All adults were placed in Gebert's breeding apparatus*. This method enables individual mosquitoes to be observed and accurate figures are arrived at.

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* Gebert, S. (1939). A small apparatus for the experimental infection of adult mosquitoes and their subsequent breeding. Trans. Roy. Soc. Trop. Med. and Hyg. Vol. 33, P. 353.

It will be seen that the majority of adults lived two to three weeks. Only about one per cent of the anophelines lived beyond forty-five days.

One *A. gambiae* lived 62 days, one *aedes albopictus* 59 days ; one *Culex fatigans* 80 days.

It has been mentioned in a previous paragraph that anophelines found in cow-sheds which were brought to the laboratory and bred produced another generation. Breeding was carried out at ordinary room temperature, the variation being around 25°C. The adults as well as the larvae were placed near a window receiving the rays of the sun during part of the day.

Other Insects

Fleas.—During the dry period, following the end of cool weather, fleas became extremely numerous and complaints were reached from all over the island. At Riambel, in the sand around certain bungalows, they were very troublesome.

Simuliidae—Those insects were found in all stages in Plaines Wilhems, Black River and Grand Port. Larvæ and pupæ were bred in the laboratory. The only species encountered was again *S. ruficorne.*